NEW EQUIPMENT DIGEST

A Penton Publication

December, 1960

Volume 25 — Number 12

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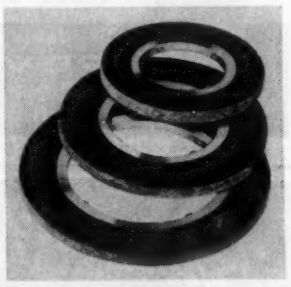
CHECK AND PASS ALONG

✓	NAME	See No.

Use Inquiry Slips—Pages 16 and 80

EQUIPMENT • MATERIALS • PROCESSES • DESIGNS • APPLICATIONS • LITERATURE

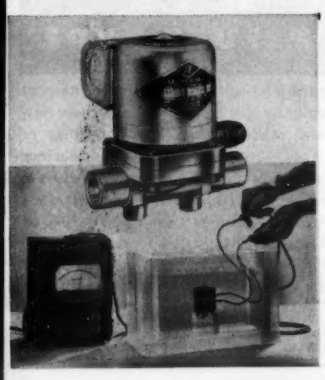
PRECISION BRUSHING TOOLS
wire points encapsulated in plastic



Blended, straight wire cutting points, encapsulated in a plastic bond to control finishing action precisely is feature of Master Blend 4 to 12-in. diameter finishing brushes. Because of controlled cutting action, peening or rolling of metal edges is minimized or eliminated. Edge blends to within 0.005 in. make possible production finishing of pump gears and similar products. Tools are used on metal finishing machines and polishing lathes to remove burrs and blend edges of fine pitch gears, remove flash of plastic parts, and for edge blending on clad metal products and powdered metal parts. • **Osborn Mfg. Co.**, 5401 Hamilton Ave., Cleveland 14, Ohio.

▲ For more details circle **NED-1 M** on enclosed inquiry slip ▲

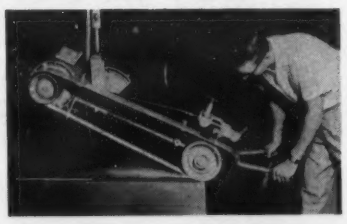
SOLENOID VALVES
have epoxy-clad coils



Permanent hermetic sealing in an epoxy resin by a vacuum process renders the coils of all Jackes - Evans solenoid valves impervious to most external causes of failure. They are waterproof and resist the effects of condensation, frost, oil, gasoline, fluid spray, and other corrosive liquids, gases, and vapors. Valves with these coils are offered in types for 24 v, 60 cycles; 115 v, 50/60 cycles; 208/230 v, 50/60 cycles; and 115/230 v, 50/60 cycles, all with UL listing. • **Jackes-Evans Mfg. Co.**, 4427 Geraldine Ave., St. Louis 15, Mo.

▲ For more details circle **NED-2 M** on enclosed inquiry slip ▲

BELT GRINDER
features air tensioning of belt



Powered by a 3600-rpm, 3 or 5-hp motor, this medium duty belt grinder has a 90-in. long abrasive belt and an 8-in. contact wheel. The 2, 3, or 4-in. wide belt is tensioned by air pressure. The grinder can be pivoted or rotated and locked in any position. Accessories convert it into swing frame, pedestal, or lathe mounted types for a wide variety of operations. Basic unit mounted on an adjustable suspension swing column has a vertical movement of 20 in. The floor stand unit can be operated as a back stand by locking the swivel and pivot bearings. An 8-in. diameter third wheel attachment for contact grinding is available. Basic 3-hp unit with 2 x 90-in. belt is $725. • **Grinding & Polishing Machinery Corp.**, 2530 Winthrop Ave., Indianapolis 5, Ind.

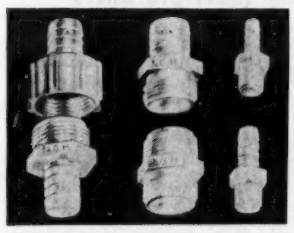
▲ For more details circle **NED-3 M** on enclosed inquiry slip ▲

PLASTIC WIRE TIES & CLAMPS
for bundling and harnessing uses

Included in line of polyethylene wire ties and cable clamps is a complete range of sizes and types. Easily installed or removed, fasteners are durable, chemically inert, and resistant to temperature from −60 to 300° F. Available in 4-in. lengths in red, blue, and yellow for color coding, they have breaking points ranging from 45 to 95 lb. Lower priced ethyl cellulose cable clamps are usable in lower temperature range of −40 to 185° F. • **Nylogrip Products**, 570 Pleasant St., Watertown 72, Mass.

▲ For more details circle **NED-4 M** on enclosed inquiry slip ▲

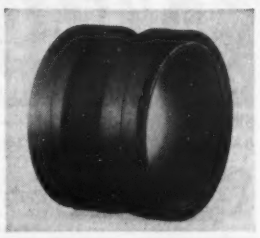
NYLON HOSE FITTINGS
iron pipe or garden hose thread



Resistance to abrasion, corrosion, contamination, and heat is reported for Tuff-Lite hose couplings, nipples, and adaptors. Made of high impact nylon, they are available in 1/4 to 1-in. sizes with standard iron pipe or garden hose threads, or combinations of both. The low cost fittings are virtually crush and breakproof and are suited for use with nontoxic tubing. • **Dixon Valve & Coupling Co.**, Dept. NAA, 1700 N. Second St., Philadelphia 22, Pa.

▲ For more details circle **NED-5 M** on enclosed inquiry slip ▲

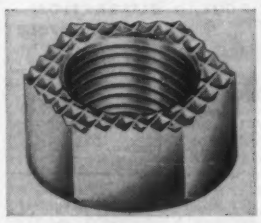
CONVEYOR IDLER SLEEVE
causes flexing to clean belt



Two treads of the Sta-Kleen Dubl-Tread conveyor idler sleeve flex the belt evenly as it passes over the idler rollers, causing caked accumulations on the belt surface to separate and flake off. A channel between the two treads receives a band that anchors the sleeve to the idler. Sleeve is fabricated of a two-ply duck foundation, with treads built up to 1/2, 3/4, or 1-in. wall thickness. It is built to the idler roll diameter. • **Goodyear Tire & Rubber Co.**, 1144 E. Market St., Akron 16, Ohio.

▲ For more details circle **NED-6 M** on enclosed inquiry slip ▲

SHELVING LOCK NUT
made in several metals and finishes



Steel shelving and slotted angle framing are applications for the Waffle Face lock nut. It is produced by a cold heading process for high strength and is available in all commercial sizes in steel, brass, aluminum, and stainless steel in various finishes. • **Jacobson Nut Mfg. Corp.**, Box 177, Kenilworth, N. J.

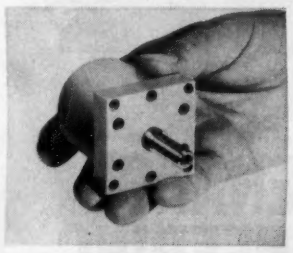
▲ For more details circle **NED-7 M** on enclosed inquiry slip ▲

POWER BARROW
attachment for small tractor

Up to 5 cu ft or 800 lb of rocks, debris, or other bulky items can be moved in this self - dumping barrow, an attachment for a Gravely tractor. It attaches with only four bolts and is one of over 30 tools and attachments for the two-wheel, gasoline-powered tractor. • **Gravely Tractors**, Dunbar, W. Va.

▲ For more details circle **NED-8 M** on enclosed inquiry slip ▲

MIDGET ROTARY ACTUATORS
for torque loads up to 80 lb-in.



Operated by hydraulic or pneumatic pressure, Rotac Midget torque actuators produce a reciprocating rotary motion. These 2-in. power cubes operate on pressures to 1000 psi and develop torques to 80 lb-in. The single-vane model has maximum arc of 270 degrees, while the double-vane unit is limited to 90 degrees. Actuators can be used in instruments, remote controls, machinery, appliances, and many other devices. • **Ex-Cell-O Corp.**, 945 E. Sater St., Greenville, Ohio.

▲ For more details circle **NED-9 M** on enclosed inquiry slip ▲

INDUSTRIAL THERMOMETER
adjusts for angle and stem length

This liquid-in-glass Adjust-All industrial thermometer is available in several temperature ranges. Three adjustment features permit a 360-degree change of angle on the case and stem, plus variations in the stem length. Adjustments are readily made in the field. It has a lightweight die cast case and enclosed hinge assembly. • **Weksler Instruments Corp.**, 195 E. Merrick Rd., Freeport, N. Y.

▲ For more details circle **NED-10 M** on enclosed inquiry slip ▲

TOGGLE & ROCKER SWITCHES
are versatile 20-amp, 125-v units

Choice of mounting arrangements, terminals, and circuitry adapt these double-pole toggle and rocker switches to various heavy-duty industrial uses. Toggle units are rated 20 amp, 125 v ac or 10 amp, 250 v ac. Rocker switches are rated 20 amp, 125 v ac. Contact arrangements available are single-throw; double-throw, center off; double-throw, no off; double or single-throw, momentary; and double-throw with one side on and one side momentary, with either no off or center off. • **McGill Mfg. Co.**, Electrical Div., Valparaiso, Ind.

▲ For more details circle **NED-11 M** on enclosed inquiry slip ▲

STANDARD ZAGAR Gearless DRILL HEADS
DRILL ANY NUMBER OF HOLES IN ANY PATTERN IN ANY MATERIAL ON ALL CENTERS

Write for Manual N-12

Drill a maximum number of holes in one pass—in any material. Holes can be as close as twice drill diameter. Zagar gearless drillheads are built as a complete unit or may be adapted to any standard drill press. Send us your part drawing and we will submit our quotation.

23880 LAKELAND BLVD. • CLEVELAND 23, OHIO
Zagar INCORPORATED
USE MORE SPINDLES TO DO MORE WORK

▲ For more details circle NED-12 M on enclosed inquiry slip ▲

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JANUARY 23-26, 1961

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AT THE CONFERENCE . . .

34 basic subjects up for discussion . . . by over 50 speakers, all experts in their fields. Hundreds of new IDEAS—FACTS—TECHNIQUES to help you on the job.

You could spend months "at home" in talking to suppliers, and never see or know about more than a fraction of the products and services on exhibit at the 1961 Plant Maintenance & Engineering Show. Over 20,000 plant executives and engineers will be on hand to profit from this twelfth annual "show-of-shows." If your responsibilities bear on efficient plant maintenance and engineering, *your company needs you in Chicago in January.* And make your trip *doubly rewarding* this year by attending Conference sessions as well as Show exhibits.

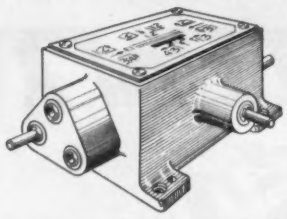
Full information on any subject pertaining to the Plant Maintenance & Engineering Show & Conference is immediately available from Clapp & Poliak, Inc. at the address below.

CLAPP & POLIAK, Inc.
Exposition Management
341 Madison Avenue, New York 17, N.Y.

▲ For more details circle NED-13 M on enclosed inquiry slip ▲

MULTIPLE RATIO GEAR BOX
for speed reduction or increase

Offered as a developmental speed reducer and increaser, this Universal Multi-Ratio gear box has five reductions and five increases. Standard dimensions adapt it for use with all hangers, breadboard plates, and components. It is stocked with 1/8, 3/16, and 1/4-in. shafts with ball or oilless bearings, and it has less than 30 min backlash throughout the gear train. • PIC Design Corp., 477 Atlantic Ave., East Rockaway, L. I., N. Y.



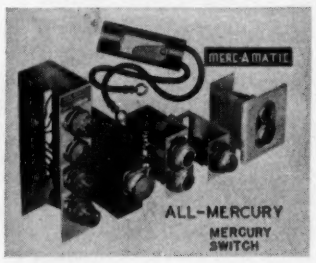
▲ For more details circle NED-14 M on enclosed inquiry slip ▲

OVER-RUNNING COUPLINGS
in 1/8 to 1-in. shaft diameters

Over-running shaft couplings which drive in one direction and free-wheel in the other are suitable for free-wheeling, indexing, or backstopping applications. Direction sensing element is a heat treated steel spring wound with a slight interference fit on the carbo-nitrided clutch hubs. If turned in driving direction, spring tightens, torque builds up, and coupling engages to drive without slip. In over-running direction, spring unwinds slightly, allowing one hub to slip with respect to the other. Stock shaft sizes range from 1/8 to 1 in. diameter. Driving torques range from 5 to 2000 lb-in. Special sizes can be made. • International-Mechanisms, 2815 Baird Rd., Fairport, N. Y.

▲ For more details circle NED-15 M on enclosed inquiry slip ▲

MERCURY PUSHBUTTON STATIONS
line includes 5-amp multiple units



Multiunit combinations with indicating light assemblies for panelboards are included in expanded line of Merc-Amatic mercury pushbutton stations. These switching devices employ sealed mercury contactors with capacities up to 50 amp. Contacts are dust, dirt, and moisture-proof, never need cleaning, and never pit. Stations meet safety requirements for hazardous locations. Many models are designed for outdoor service. • Tigerman Engineering Co., 4332 N. Western Ave., Chicago 18, Ill.

▲ For more details circle NED-16 M on enclosed inquiry slip ▲

XMAS GIFTS Low Cost Different!
SCIENCE • MATH • OPTICS

ORDER BY STOCK NO. • CHECK—M.O. • SATISFACTION OR MONEY BACK

6X POCKET COMPARATOR
Use to check layouts, machining on tools, dies, gauges, threads, chamfers, etc. Measures angles, radii, circles, linear in both decimal inches & millimeters.
Stock No. 30,061- AE — $19.50 Pstpd.

WOOD PUZZLES
Fascinating fun. Stimulates ability to think and reason. 12 different puzzles — animals, geometric forms to take apart and reassemble.
Stock No. 70,205- AE — $3.00 Pstpd.

CRYSTAL GROWING KIT
Grow breath-taking display of large crystals with this set.
Stock No. 70,336- AE — $9.50 Pstpd.

1,000 LB. ROPE HOIST
Extra heavy duty — uses 24 ft. long 3/4" rope. Steel swivel hooks, roller bearings and steel rope lock — holds in any position. 1,000 lbs. capacity.
Stock No. 70-316- AE $5.00 Pstpd.

SCIENCE TREASURE CHESTS
For Boys, Girls, Adults!
Excellent Science Fair Project Material!
STANDARD CHEST . . . Extra powerful Magnets, Polarizing Filters, Compass, One-way Mirror Film, Prism, Diffraction Grating, lots of other items for hundreds of thrilling experiments, plus 10-Lens Kit for making telescopes, microscopes, etc. Full instructions included.
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DE LUXE CHEST . . . Everything in Chest above plus exciting additional items for more advanced experiments.
Stock No. 70,343- AE — $10.00 Pstpd.

50–150–300X MICROSCOPE
Amazing Value!
3 Achromatic objective lenses on revolving turret! Imported. Fine rack and pinion focusing.
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BARGAIN! 3" ASTRONOMICAL TELESCOPE . . . 60 TO 180X
See stars, moon, planets close-up. Famous Mt. Palomar reflecting type. Equatorial mount; finder telescope; hard-wood tripod. "Star Chart", "Hand Book of Heavens" plus directions included free.
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ANALOG COMPUTER KIT
Used for multiplication, division, powers, roots, logs, trig, physics. Easy screwdriver assembly.
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CIRCULAR DIFFRACTION GRATING JEWELRY
A dazzling rainbow of color. Just as a prism breaks up light into full range of spectrum colors, so does Diffraction Grating.
Stock Nos.
30,349- AE — Earrings . . $2.75 Ppd.
30,350- AE — Cuff Links, $2.75 Ppd.
30,372- AE — Pendant . . $2.75 Ppd.
30,390- AE — Tie Clasp . . $2.75 Ppd.

FREE! Write for Giant 'CATALOG AE' 144 pages! Over 1,000 Bargains!
SCIENCE • MATH • OPTICS
For industry, hobbyists, etc.!

EDMUND SCIENTIFIC CO., Barrington, N. J.

▲ For more details circle NED-17 M on enclosed inquiry slip ▲

REVCO
ULTRA-LOW TEMPERATURE CABINETS

for
- Research
- Storage
- Seasoning
- Testing

Seven Revco cabinets, both chest and upright styles, are available. Capacities range from 1.5 to 6 cu. ft. in chests and to 22 cu. ft. in uprights. Units provide temperatures to −140° F. controllable within ±1°. Optional accessories are offered. Immediate delivery on all units.

For your FREE copy of the helpful folder, "Selecting a low temperature cabinet," write Revco, Dept. NED-120.

Industrial Products Div.,
REVCO INC.
Deerfield, Michigan
Setting Trends in Refrigeration Since 1938

▲ For more details circle NED-18 M on enclosed inquiry slip ▲

When you need a relube type bearing unit, you can get more compact design and lighter weight by specifying Browning. Reason: these new pillow blocks, flange blocks and take-up units have housings of stronger *unbreakable malleable.* They feature self-aligning ball bearings secured to the shaft by two set screws in the wide inner ring. All have elongated bolt holes for maximum adjustment. In 29 shaft sizes, 1/2 to 2 1/16". Ask Browning distributor for new Catalog BU-103, or write **Browning Manufacturing Company, Maysville, Kentucky.**

Browning POWER TRANSMISSION EQUIPMENT

▲ For more details circle NED-19 M on enclosed inquiry slip ▲

REELS roll SMOOTHLY on ROLL-A-REEL

for pay-out or take-up of anything on reels

No pulling heavy reels . . . no pushing . . . JUST LOAD and away you go!

- Easily portable
- No jacks
- Handle any reel diameter
- Heavy steel frame
- Slanted front
- Ball-bearing adjustable rollers
- Positive roller lock for unloading

STYLE B — 4,000 lbs. cap. for 1 reel up to 48" wide; or for 2 reels up to 24" wide each. Weight 110#. PRICE $84.50 f.o.b. Cincinnati

All are drilled for optional auxiliary ball-bearing side rollers, $5.00 per set extra.

STYLE A — 2,000 lbs. cap. for reels up to 28" wide. Weight 60#. PRICE $46.50 f.o.b. Cincinnati

• Special sizes on request.

ROLL-A-REEL 4626 Reading Road Cincinnati 29, Ohio

▲ For more details circle NED-20 M on enclosed inquiry slip ▲

EASY . . . ALL MATERIALS IN SPRAY CANS

FIRE-SAFE . . . or Chlorine-Free Formulas—SPECIFY

SAVE MONEY . . .
Prevent breakdowns, lost man-time and accidents—with *safe* maintenance and repair. Check parts and machinery regularly with low-cost hand-portable Spotcheck . . . Simple, positive, fast, easy . . . Just spray on Spotcheck from push-button cans. Cracks and defects open to the surface "pop" out bright red against white background. You can't miss them! Used by thousands of plants, overhaul shops, airlines, heavy equipment users.

COMPLETE SK-3 KIT only $36.00

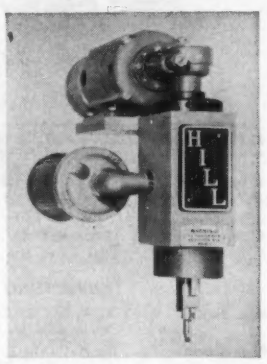
2 spray cans Penetrant, 2 spray cans Developer, 4 spray cans Cleaner-Dye Remover, instructions, cleaning cloth, wire brush. Steel CABINET-CARRYING CASE. Specify FIRE-SAFE or chlorine-free materials.

Prices: Continental U.S.A. only and Hawaii. F.O.B. our plant, Chicago, Illinois, plus local taxes.

ORDER FROM YOUR DISTRIBUTOR — or direct
MAGNAFLUX CORPORATION
A Subsidiary of General Mills
7349 W. Ainslie Ave., Chicago, Ill.

▲ For more details circle NED-21 M on enclosed inquiry slip ▲

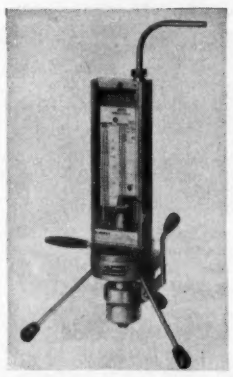
RIVETER HEAD
pein type offered as separate unit



Spin-impact, peining type riveter head is now available as a separate unit for vertical, horizontal, or angle mounting on a column, pedestal, or panel. Several heads can be combined on one machine in various arrangements. A small motor rotates the air-operated piston, delivering a rapid succession of peining blows by the rotating tool. Difficult riveting jobs, including those of a fragile nature, are handled. Optional accessories are an air regulator, solenoid valve, and synchronous timer control. • **Hill Machine Co.**, 1301 Eddy Ave., Rockford, Ill.

▲ For more details circle NED-24 M on enclosed inquiry slip ▲

VACUUM GAGE
for portable or fixed use



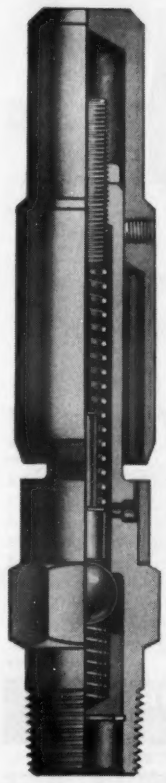
McLeod type Measuvac TD-1 vacuum gage requires no electrical connections or batteries and needs less than 8 oz of mercury. Its separate reading capillaries are easily detached from the main body for replacement or cleaning. Usable as a portable instrument or operated from a fixed mount, it has pressure ranges of 0.150 to 8 mm and 1 to 2000 microns. Detachable legs form a stable, self-leveling tripod base for bench use. Tapped holes on the rear are for bracket, tank, panel, or pipe mounting. • **New York Air Brake Co.**, Kinney Mfg. Div., 3529 Washington St., Boston 30, Mass.

▲ For more details circle NED-25 M on enclosed inquiry slip ▲

TURNS-COUNTING DIAL
shaft position shown to 1/100 turn

Usable on 1/4-in. shafts, Model 30 turns-counting dial has a satin-chrome finish with a black insulated knurled grip. This 1 13/16-in. diameter control indicates shaft position in increments of 1/100 of a turn, with each full turn shown by a number appearing in a viewing window. A brake mechanism allows dial to be set and locked using only one hand. Price is $5.75 in quantities. • **Spectrol Electronics Corp.**, 1704 S. Del Mar Ave., San Gabriel, Calif.

▲ For more details circle NED-26 M on enclosed inquiry slip ▲



AIRLARM

LOW PRESSURE WARNING DEVICE

completely self-contained
entirely automatic
fully mechanical

Sets off shrill warning whistle when air pressure drops, shuts off when proper pressure is restored. Constructed for durability of aluminum and brass — screws into air line at any convenient point with 3/8" N P T connection. Has overall length of 4½". Requires no auxiliaries. Airlarm can be pre-set through a wide range of operating pressures.

$15.75

Typical Applications Include:

- air chucks and clamping fixtures
- instrument or control air systems
- dry sprinkler systems
- air presses
- air powered intensifiers
- air clutches and brakes
- air tools

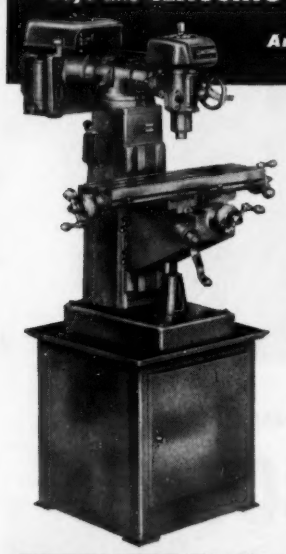
RONEY, INC.
105 Cole Street
Dallas 7, Texas

▲ For more details circle NED-28 M on enclosed inquiry slip ▲

875 DOLLARS

Buys this **CLAUSING** *Vertical Miller*

And look what you get!



1 ACCURACY VERIFIED to within TENTHS

- Spindle taper (internal) runout within .0002" at spindle nose.
- Top of table square with column ways within .0005" in 6" travel.
- Table T-slots parallel to table dovetail ways within .0005" in 8" longitudinal travel.

These and other tests showing exact indicator readings are on the report accompanying your machine.

2 VERSATILITY – The Clausing mills, drills, bores, reams, and shapes . . . at all angles . . . with one work set-up! It's perfect for general production, experimental, layout, and light jig-bore work.

3 EFFICIENCY – Users report that *"the Clausing is the easiest to set up, get around and operate of any mill."*

The CLAUSING vertical mill is truly an *outstanding* machine tool value! Write for a catalog today.

CLAUSING DIVISION OF ATLAS PRESS COMPANY

OUTSTANDING VALUES IN PRECISION MACHINES

12-115 N. PITCHER STREET, KALAMAZOO, MICHIGAN

▲ For more details circle NED-22 M on enclosed inquiry slip ▲

PREMIUM POWER* at no extra cost

Master Power GRINDERS

Light enough to keep operator fatigue at a minimum . . . with balanced design for ease of handling. The efficient Floating Rotor on Master Power grinders is self-aligning, minimizes wear on end plates. Many parts interchangeable for extra savings. Write for complete data.

*4 WAYS "PREMIUM POWER" BENEFITS YOU...

- Larger chamber for more powerful stroke in same size tool.
- Rotor blades 30% wider for longer life, greater power.
- Advanced design of cylinder liner means more power-per-ratio of air.
- More HP in less weight.

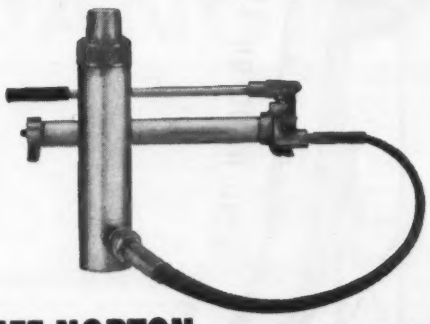
LOOK UNDER TOOLS—PNEUMATIC

Leading distributors everywhere sell

MP Master Power
Master Power Corporation • Solon, Ohio
A *Black & Decker* Subsidiary

▲ For more details circle NED-23 M on enclosed inquiry slip ▲

VERSATILE POWER PACKAGE



DUFF-NORTON RAM-PAC®

HYDRAULIC RAMS AND PUMPS

The Duff-Norton Ram-Pac line provides a versatile source of power to apply from 10 to 100 tons of force in any direction—with little effort.

The twelve rams may be used with the hand or power pumps as portable sources of power and for permanent installation in hydraulic jigs, fixtures and presses.

The Ram-Pac line has five pumps—two hand, one air-hydraulic, one electric and one gasoline. Attachment units and accessories are available. For details ask your distributor or write for Bulletin AD-90—N.

DUFF-NORTON COMPANY
Four Gateway Center • Pittsburgh 22, Pa.

▲ For more details circle NED-27 M on enclosed inquiry slip ▲

today's most "able" HAND TYPE CLEANER by IDEAL

• VACUUMS
• BLOWS • SPRAYS
• DRIES*

HEAVY DUTY MODEL. Medium and Light Duty models also available.

Capable . . . Delivers efficient, economical, all-around service — whether you use it as a vacuum, blower, sprayer or drier*. Cast aluminum housing, streamlined and light in weight, makes possible long, continuous use without operator fatigue.

*Heater Nozzle available for Light Duty Model only.

Durable . . . Outlives lesser cleaners because it is ruggedly built to withstand the roughest industrial use. Heavy Duty 1⅓ H.P. motor, air-cooled for extra long life, blows at a velocity of 26,500 feet per minute.

Adaptable . . . Economically converts to Tank Type cleaner in less than a minute.

TANK CONVERSION PACK

Multiply the usefulness of IDEAL'S Heavy and Medium Duty Hand Type Cleaners by converting to a powerful, all-purpose STANDARD Cleaner. Conversion Pack consists of wheel-mounted 12-gallon steel tank and large dust-tight bag.

Sold Through America's Leading Distributors
In Canada: Irving Smith, Ltd., Montreal

IDEAL INDUSTRIES, Inc.
1032-L Park Avenue, Sycamore, Illinois

Please send me full catalog data on IDEAL'S Hand Type Cleaners and Conversion Packs.

Name_____
Company_____
Address_____
City_____ Zone_____ State_____

▲ For more details circle NED-29 M on enclosed inquiry slip ▲

METARAYS DON'T BUST!

Maybe there's a better word . . . but none says it better. If you're using glass infrared lamps, and have a high breakage rate, here's the answer. Chromalox Metarays have unbreakable, metal-sheathed elements. Maintenance is all but eliminated. Dust, dirt, and paint dropped from parts in process are burned off by the element. Rated 120 volts, 375 to 1200 watts, Metarays create no glare . . . can be operated by automatic or manual controls.

Next time you break a glass infrared lamp, replace it with a Metaray . . . it won't bust. Write today for literature and prices.

CHROMALOX ELECTRIC HEAT
Edwin L. Wiegand Company
7509 Thomas Boulevard • Pittsburgh 8, Pa.

▲ For more details circle NED-30 M on enclosed inquiry slip ▲

- Large Manufactured Head
- Oversize Blind Head
- Plugged or Hollow
- No Stem Trimming
- Minimum Blind-Side Clearance
- Excellent Head Seating
- Wide Grip Range
- Full Range of Diameters
- Positive Hole Fill
- Easy Installation

For fast, secure, more economical fastening, the new Cherry Commercial Rivet is a blind fastener ideal for production manufacturing and repair. Installed by one man from one side of the work, the Cherry Commercial Rivet reduces cost of assembly, repair and maintenance in both blind and open applications.

Minimum blind side clearance, adaptability to variations in material thickness, and positive hole fill even in oversize or out-of-round holes offer advantages not available in other production fasteners.

Cherry Commercial Rivets are available in both hollow (non-structural) and plugged (structural) types. The plugged rivets have strength values comparable to solid rivets, and stems fracture to eliminate all trimming operations and provide further production economy.

Grip lengths from 1/32" to 1" inclusive, and diameters of 1/8", 5/32", 3/16" and 1/4" are provided in either universal or countersunk head. Special rivets are manufactured to order.

For full technical information on the new Cherry Commercial Rivet, write Cherry Rivet Division, Townsend Company, Box 2157-G, Santa Ana, California.

Aluminum Mild Steel Monel

Cherry Rivet Division
SANTA ANA, CALIFORNIA
Townsend Company
ESTABLISHED 1816
EXECUTIVE OFFICES—BEAVER FALLS, PA.

In Canada: Parmenter & Bulloch Manufacturing Company, Limited, Gananoque, Ontario

▲ For more details circle NED-31 M on enclosed inquiry slip ▲

NEW EQUIPMENT DIGEST
A PENTON PUBLICATION

PENTON BUILDING, CLEVELAND 13, OHIO • MAin 1-8260

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BPA NBP

Distribution this issue 87,000 copies

Handbook on End Mills

More than 1800 standard sizes and types of end mills are described and listed in 124-page Catalog 60. Also covered are reamers, counterbores, and special-purpose tools. "Pictorial Tool Selector" shows each type of tool and the proper page references. An alphabetical-numerical index is an added time saver in this spiral-bound reference book. Available only by writing on your company letterhead to: Putnam Tool Co., 2985 Charlevoix Ave., Detroit 7, Mich.

▲ For more details circle NED-32 M on enclosed inquiry slip ▲

Under the thin, rough-surfaced belt a metal bed with Magna Rail holds ferrous parts securely on 90° angle climbs. Part of a complete line of build-your-own Logan Adapto Conveyors.

LOGAN CO. 215 CABEL ST., LOUISVILLE 6, KY.

Logan Conveyors

▲ For more details circle NED-33 M on enclosed inquiry slip ▲

THE FINEST HOIST MONEY CAN BUY

munck

Several Thousand Munck Hoists now serving Canadian industry satisfactorily from coast to coast in all types of services and under all types of conditions.

10 TON LOW HEADROOM ONLY 28 INCHES

LISTED BELOW A FEW PRICES PROVING MUNCK HOIST COMPETITIVENESS

Size Tons	Lift Feet	Speed F.P.M.	Base Mounted	Push Type Trolley	Hand Geared Trolley	Motor Driven Trolley
1	24	40	$ 592	$ 670	$ 700	$1030
1½	16	28	658	760	790	1090
2	12	20	695	790	820	1100
3	33	28	1120	1310	1340	1580
5	22	18	1195	1480	1510	1850
6	16	14	1260	1660	1690	2030
7½	26	13	1760	....	2220	2620
10	20	10	1790	....	2500	2890
12½	26	8.5	....	....	3310	3700
15	22	6	....	....	3590	4120

You'll find these important features on all Munck Hoists: Built-in motor inside drum saves space, weight; high grade shaft and gears. Unique conical rotor brake: also regular load brake. Automatic two-way limit switch. Ingenious cable guide prevents overriding.

Introducing the MUNCK hoist to the U.S. market, we solicit inquiries from O.E.M. and/or large distributor accounts who are prepared and able to STOCK-SELL-SERVICE the MUNCK hoist and crane components. Attractive prices, liberal discounts. The hoists will be equipped with American controls, to be installed by appointed representatives.

FISKER-MUNCK HOIST & COMPANY
Room 218 Sidway Bldg. 775 Main Street, Buffalo, N. Y.

▲ For more details circle NED-34 M on enclosed inquiry slip ▲

Two Good Reasons Why a

THERMOGRIP®

Adhesive System

Can Benefit You

On the one hand there's THERMOGRIP adhesive itself.

This unique hot melt adhesive in cord-like form is applied intermittently or continuously in wide or narrow patterns to make bonds where other adhesives fail, take too long to set-up, or cost too much.

On the other hand, there is the variety of THERMOGRIP applicators available . . . seven types . . . including wheel and nozzle. The man pictured is holding a Model CN Applicator.

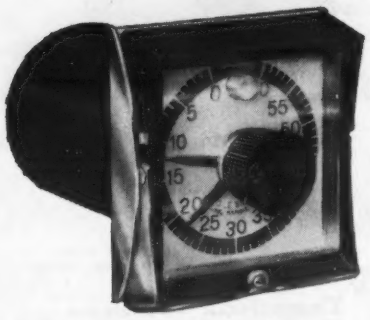
This unique adhesive-applicator combine is designed to be easily adapted to processing equipment, high speed assembly lines, and wherever a seam, pattern or dot of adhesive can accomplish the fastening function.

Here's a new equipment idea that may represent lower costs and higher efficiency for machines that put things together. Ask for THERMOGRIP catalog.

United
UNITED SHOE MACHINERY CORPORATION
140 Federal Street, Boston, Mass.

▲ For more details circle NED-35 M on enclosed inquiry slip ▲

NEW PLUG-IN TIMER
for controlling industrial processes



EAGLE'S HP5 CYCL-FLEX

Offers: Fast, easy installation
- **Quick change of time ranges**
- **Quick means of localizing trouble**

With 4 switches — 2 switches operate instantly when timer is energized — 2 switches operate with time delay — delay time adjustable — selection of dials from 10 seconds to 60 hours.

To Remove: Lift handle and pull out

Address Dept. NED-1260

EAGLE SIGNAL • **Moline, Illinois**
A DIVISION OF THE GAMEWELL COMPANY, AN E. W. BLISS COMPANY SUBSIDIARY

▲ For more details circle **NED-36 M** on enclosed inquiry slip ▲

NEW "CUSTOM" MULTI-USE PUMP

—handles FOUR different fluids or gases at one time!

NO CLEAN-UP REQUIRED

—to change materials or color as pump parts do not contact the fluids or gases

Ideal for plants pumping glue, inks, acids or other liquids up to 30 gallons per hour, and in laboratories where controlled quantities must be pumped. Pumps operate quietly; seal off when stopped; flow rate of each station can be controlled separately. Pumps will also handle gases at same volume rate as liquids. Explosion-safe, fully enclosed motor; air motor or shaft drive available. Pump features lightweight, aluminum construction and is completely portable.

Call or write for illustrated bulletin and prices. Mention drive desired, length of tubing required, viscosity of fluids or type of gases handled.

CUSTOM MACHINE COMPANY
119 HIGHLAND PARKWAY, ROSELLE, NEW JERSEY
Telephone: CHestnut 1-2980

▲ For more details circle **NED-37 M** on enclosed inquiry slip ▲

Another Measurable Advantage from General Electric
NEW INDUSTRIAL MINIATURE OIL-TIGHT PUSH BUTTONS

General Electric's complete new line of CR104 Industrial Miniature Oil-tight Push Buttons offers you distinct, *measurable* advantages:

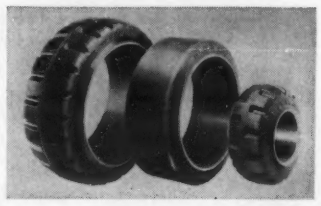
- **FULL LINE**—Now you can design your entire panels with miniature units. A wide variety of operators is available, plus various modifications, special units, and nameplates. Color coding of *both* operators and rings provides you the flexibility of many different color combinations.
- **PANEL SPACE SAVINGS**—You can cut panel space at least 40 percent by standardizing on new G-E miniature oil-tight push buttons.

NEW FREE BULLETIN! Write for GEA-7127, Schenectady 5, N. Y., or contact your local G-E Apparatus Sales Office. 811-12

GENERAL ELECTRIC

▲ For more details circle **NED-38 M** on enclosed inquiry slip ▲

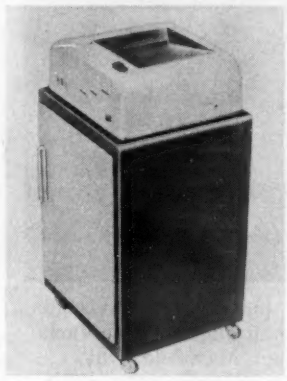
POLYURETHANE TIRES
press-on type support heavy loads



Both smooth solid tread and cushion traction tread are offered in this line of polyurethane press-on tires for industrial trucks. They reportedly support two to three times more load than rubber tires, permitting loads up to 15,000 lb per wheel. They also out-wear rubber tires by a considerable margin. Toughness of the material minimizes chunking out and tearing. The bonding process used prevents tread separation. Tires are made in standard diameters and widths. • **American Vulko-Tread Corp.**, 8128 N. Lawndale Ave., Skokie, Ill.

▲ For more details circle **NED-39 M** on enclosed inquiry slip ▲

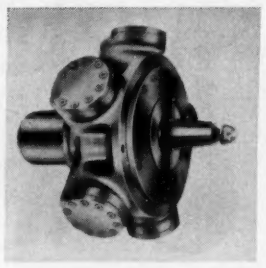
PAPER SHREDDER
destroys papers and makes packing



Obsolete confidential business papers are destroyed quickly by the Destroyit, a paper shredder which converts eight sheets of bond paper into 3/32-in. shreds at one time. Designed for office use, it has a movable cabinet and its own removable waste bin. Paper clips and fasteners do not damage the mechanism. Machine will make 88 lb of shredded wool for packing and shipping use in 1 hr. Operating on 110 v ac, the 71-lb shredder is compact. • **Michael Lith Sales Corp.**, 145 W. 45th St., New York 36, N. Y.

▲ For more details circle **NED-40 M** on enclosed inquiry slip ▲

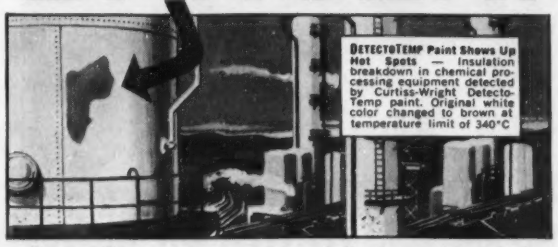
HYDRAULIC MOTORS
two high torque, low speed models



Rapid reversing is possible with Staffa hydraulic motors, designed for coupling directly to conveyors, rolling mills, hoists, winches, and other equipment. Seven-cylinder model is rated 6600-lb-ft continuous torque, with peaks to 10,000 lb-ft. Five-cylinder model has a 4600-lb-ft continuous torque rating, with peaks to 7000 lb-ft. Variable speed ranges are 0 to 75 and 0 to 100 rpm, respectively. The English made units are sealed and self-lubricated. • **Double A Products Co.**, Manchester, Mich.

▲ For more details circle **NED-41 M** on enclosed inquiry slip ▲

Color-Changing Paint Indicates DANGER!



DETECTOTEMPS are temperature indicating paints which change from one color to a totally different color when certain temperatures are reached. They are used in hundreds of operations from chemical processing, petroleum refining to welding, forging, heat treating and wherever monitoring surface temperatures can improve a product quality or reduce production costs. The distinctive color change can be seen at distances, avoiding the need to get close to hot objects. Application bulletins on specific uses available.

Phone SWinburne 9-0500 or write.

DETECTOTEMP
Paint available in 4 oz. and 1 lb. metal cans.
Temperature range — 40°C to 1350°C.

Thermochrom
Crayons convenient for testing surface temperatures of small areas.
Temperature range — 65°C to 670°C.

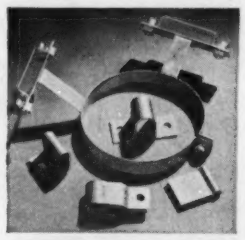
CURTISS WRIGHT
Princeton Division • Princeton, New Jersey
Inquiries from qualified Manufacturers Rep. invited.

▲ For more details circle **NED-42 M** on enclosed inquiry slip ▲

Multiform BIG BROTHER BENDER

Model BBB

SMALLER MODELS AVAILABLE



Illustrated above are a few of the many forms that can be produced efficiently on the Multiform Bender.

AIR OPERATED MODELS IN FOUR SIZES
HYDRAULIC—3 MODELS

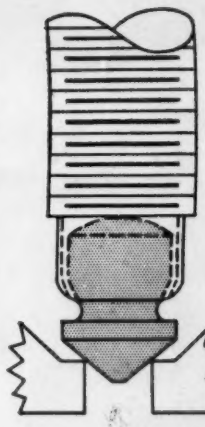
The heavy duty Big Brother Bender is designed for fabricating bus bars, brackets, fixtures, etc., without special tooling. Air controlled with finger tip response. Comes complete with dies, mandrels and wrenches—punching and blanking dies extra. Will punch holes up to 1" and form material up to ¼" thick by 4" wide. We also build smaller models, hand or air operated, for bending materials up to ⅛" x 1½".

Send for illustrated folder M6

J. A. RICHARDS CO. Myrtle & Pitcher Sts. Kalamazoo, Mich.

▲ For more details circle **NED-43 M** on enclosed inquiry slip ▲

NEW FOXBORO "FLOATING CONE" DESIGN ELIMINATES VALVE LEAKAGE



You can't gall or score the new Foxboro ¼-inch hand valve. Exclusive "floating cone" plug design makes it impossible to rotate valve plug once it has been firmly seated. Extra turns of the valve handle move stem only—plug remains stationary Chance of galling and scoring is eliminated — a leak-tight closure assured every time. For general purpose liquid or gas service—including steam. 3000 psi at 100°F; 2500 psi at 450°F. For fast service, order directly from your nearby Foxboro Field Engineer. Or write for Bulletin 7-14. The Foxboro Company, 6612 Neponset Avenue, Foxboro, Massachusetts.

FOXBORO
REG. U. S. PAT. OFF.

▲ For more details circle **NED-44 M** on enclosed inquiry slip ▲

NEED BETTER
MOISTURE AND OIL REMOVAL?
(for your compressed air system)

Only the Adams CYCLONE Separator assures peak efficiency in the removal of oil and water from your compressed air system. Top operation is achieved from one-quarter to full load by the exclusive cyclone design. It is a proven principle of operation which automatically compensates for variation in load to maintain constant separating efficiency. The underlying feature is the inner cyclonic vortex formed within the unit itself by the air stream. The diameter of the vortex changes in proportion to variations in the load or air velocity. However, the angular air velocity, the RPMs, remain constant — and it is the angular velocity — the infinite changes of direction, which effect the separation of entrained particles at practically constant efficiency.

Remember, your aftercooler is only as effective as the separator which removes the condensed oil and water. Find out today how the Adams design can improve your oil and moisture removal efficiency. Write today for your copy of Bulletin 714.

R. P. ADAMS CO., INC.
227 EAST PARK DRIVE • BUFFALO 17, NEW YORK

▲ For more details circle **NED-45 M** on enclosed inquiry slip ▲

CONTROL COSTLY PIPE MOTION

Flexonics METAL HOSE

Your Flexonics distributor is a "Pipe Motion Specialist." Let him analyze your pipe motion problems, make recommendations that minimize equipment maintenance, prolong its life. He has a large inventory of standard hose and fittings . . . is equipped to fabricate complete assemblies to your specifications.

For fast, dependable local service call your

EM-445

Flexonics

PIPE MOTION SPECIALISTS

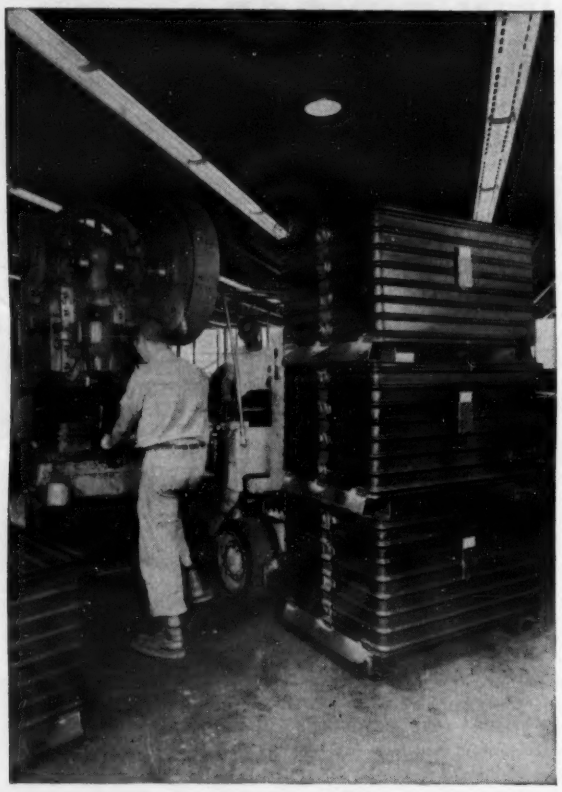
Authorized Distributor

Write for your free copy—FLEXONICS METAL HOSE CATALOG.

FLEXONICS CORPORATION
1343 Third Avenue, Maywood, Ill.

SUBSIDIARY OF CALUMET & HECLA, INC.

▲ For more details circle NED-49 M on enclosed inquiry slip ▲



Now in standard sizes . . .

Amco corrugated steel containers save floor space, material handling time

Look what's new — Amco corrugated steel containers in a choice of two standard sizes. These heavy-duty containers save you valuable floor space . . . cut material handling time. They're designed for lift truck handling, stacking, dumping.

Amco corrugated steel containers offer you:

- Two standard sizes . . . 17.5 or 8 cubic feet
- All-welded, heavy gauge ribbed steel construction
- Great strength . . . larger size can be stacked five high with 5000 lb load each, smaller size six high with 3000 lb load each
- Rugged nesting skids, two card holders; self-draining
- Orderly, compact storage for whatever you make, store or ship
- Attractive prices
- Immediate delivery

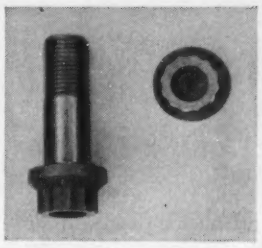
For detailed specifications and prices, write or call . . .

AMCO
SINCE 1888

Cleveland, North Carolina BRoadway 8-2221

▲ For more details circle NED-50 M on enclosed inquiry slip ▲

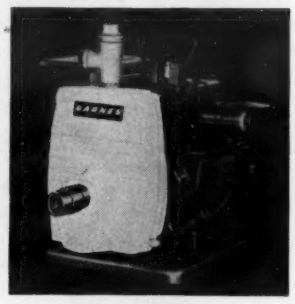
HIGH TENSILE BOLTS with 12-point external-wrench head



Twelve-point external-wrenching head of these high tensile strength bolts allows high torquing for greater preloads. Head will accept standard box and socket wrenches. Stocked in popular sizes, bolts meet requirements of MS9033 through MS9039 for high temperature use and MS9088 through MS9152 for high strength-to-weight ratios. Special sizes can also be made to order. • **Mercury Air Parts Co.**, High Temperature Div., 9310 W. Jefferson Blvd., Culver City, Calif.

▲ For more details circle NED-51 M on enclosed inquiry slip ▲

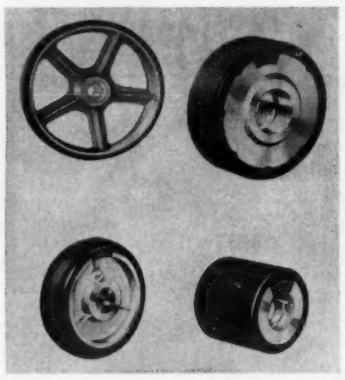
ELECTRIC & GASOLINE PUMPS deliver up to 3200 gph at 60 psi



Quad volute assures quick and positive self-priming of these multistage utility pumps, available in improved electric and gasoline models. They deliver up to 3200 gph at pressures up to 60 psi. Features include bronze impellers and check valves, compact design, and bronze check valve. Suction side is tapped for 1¼-in. pipe. Discharge is 1 in. Hose adapters for many applications are optional. • **Barnes Mfg. Co.**, 531 N. Main, Mansfield, Ohio.

▲ For more details circle NED-52 M on enclosed inquiry slip ▲

INDUSTRIAL WHEELS for lift and manual trucks, casters



Floor protection, long life, and minimum power consumption are afforded by improved line of Durothane industrial wheels. Included are Durothane D wheels for lift and pallet trucks and casters, and a low profile wheel. The nonsmudging tire for towline systems and manually operated trucks meets specifications for the low profile wheels. Improved polyurethane elastomer compound gives the wheels high load capacity and resistance to cutting and chunking. • **Divine Brothers Co.**, 200 Seward Ave., Utica, N. Y.

▲ For more details circle NED-53 M on enclosed inquiry slip ▲

PREPARE FOR WINTER ON THE JOB NOW

IPCO WINTER LINERS provide winter warmth and protection for your workers—longer serviceability for your safety apparel dollar! Designed to fit all types of hard hats, IPCO Winter Liners are pre-shrunk, vat dyed—and every seam lock-stitched to prevent unravelling. Bias-cut bonding provides "give" for extra wearing comfort. Small, medium and large sizes assure correct fit for every head size. Quality construction at a reasonable price makes the difference when you specify IPCO Winter Liners. IPCO also supplies heavy weight, protective winter clothing for every job requirement. Write for information and prices *today*.

- **STYLE # 800** (shown) Khaki Twill — Flannel-Lined. 4 Straps—Tie String
- **STYLE # 900** Khaki Twill — Flannel-Lined. 3 Straps—Tie Strings
- **STYLE # 7** Golden Twill — Canton Flannel-Lined. Top and Tie Strings

Reg. U.S. Pat. Off. 9-920

IPCO SAFETY PRODUCTS
INDUSTRIAL PRODUCTS COMPANY
2807 N. Fourth Street • Philadelphia 33, Pennsylvania

▲ For more details circle NED-54 M on enclosed inquiry slip ▲

Tempilstik°

*temperature indicating crayons**

*Also Tempil° Pellets and Tempilaq° (liquid form)

Tempilstik°—a simple and accurate means of determining preheating and stress relieving temperatures in welding operations. Widely used in all heat treating—as well as in hundreds of other heat-dependent processes in industry. Available in 80 different temperature ratings from 113°F to 2500°F . . . $2.00 each.

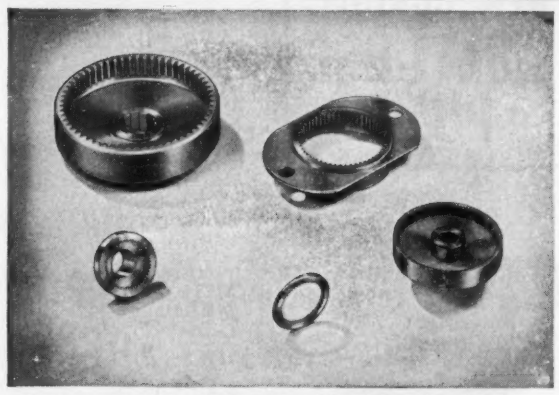
Send for free sample Tempil° Pellets. State temperature desired . . . Sorry, no sample Tempilstiks°.

Most industrial and welding supply houses carry Tempilstiks° . . . If yours does not, write for information to:

ADVERTISING DIVISION

Tempil° CORPORATION
132 West 22nd St., New York 11, N. Y.

▲ For more details circle NED-55 M on enclosed inquiry slip ▲



Famous G. S. Precision Guards Your Production

Whether you need hundreds or thousands, G.S. gives you a degree of UNIFORM accuracy *unapproached by any other Small Gear maker in the world!* That assures smooth, dependable performance and low assembly costs.

G.S. Small Gearing is mass-produced in a range of sizes from 8 to 96 dp . . . from ⅛" to 8" diameters, and from any Gear material. Capable G.S. engineers will gladly help you develop the ONE best and most economical design for your specific needs. Send drawings and specifications or a complete description.

SEND FOR FREE Illustrated Small Gearing Guide

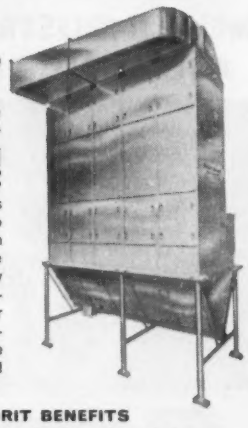
FRACTIONAL HORSEPOWER GEARING

GEAR Specialties, Inc.
Spurs • Spirals • Helicals • Bevels • Internals • Worm Gearing
2635 WEST MEDILL AVENUE, CHICAGO 47, ILLINOIS

WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF FRACTIONAL HORSEPOWER GEARS

▲ For more details circle NED-56 M on enclosed inquiry slip ▲

NEW TORIT DUST COLLECTOR IS AUTOMATIC!



Save real dollars with the benefits from this automatic dust collector. No more interruptions on production lines! Maintenance problems are practically eliminated. This all new continuously cycling TORIT dust collector automatically cleans your air and automatically shakes its own filters and blows them clean with reverse air flow. Collected material is emptied automatically.

OTHER EXCLUSIVE TORIT BENEFITS

- automatic filter-shaker mechanism is simple, maintenance-free
- different dusts may be collected separately
- highest air-to-cloth ratios (from 5 to 25:1) and longer filter life
- only ¾ H.P. required for fully automatic operation
- polished ¾" aluminum construction for minimum floor loading
- modular design—5' wide x 4'-8" long (for two sections) x 15'-6" high—saves space, lends ease and versatility to installation. Use up to 12 modular sections for each application! No limit to CFM capacity!

Write today for literature.

TORIT MANUFACTURING COMPANY
Automatic Collector Division
1133 Rankin Street, St. Paul 16, Minnesota, Dept. 235

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Here's data on the *New*

DIAL HEAD AGASTAT®

time/delay/relays

These relays have recently been re-designed—improved in performance *and* appearance. So you'll want up-to-date specs.

This free folder gives complete details on all models. In it you'll find operating specs, timing ranges, contact capacities, dimensions, diagrams of contact and terminal arrangements, and data on mounting and installation accessories.

For your copy, write: Dept. A34-125.

AGASTAT TIMING INSTRUMENTS
ESNA
ELASTIC STOP NUT CORPORATION OF AMERICA
1027 NEWARK AVENUE, ELIZABETH 3, NEW JERSEY

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"BEST SEALER FOR TOUGH JOBS"

KEY® Graphite Paste, the tight sealing pipe joint compound, goes on easy, seals fast. It's ideal for oil, gas, and high pressure steam lines—safe for flammable liquids. (Listed under Re-examination Service of Underwriters' Laboratories, Inc.) Expands under heat — lubricates and protects threads while it seals. Speeds disconnecting — joints don't freeze.

Key Graphite Paste is applied with a brush—no crumbling or waste. Extra long open-can life eliminates thinning and stirring.

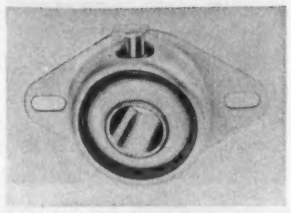
Available in the following sizes: ¼ lb. cans, Handy Dope Kit, 1 lb., 2¾ and 10 lb. cans, 30 lb. and 60 lb. buckets and 500 lb. drums.

WRITE FOR CIRCULAR 240-B KP 5902R

W-K-M DIVISION OF ACF INDUSTRIES INCORPORATED
Dept. Z12, P. O. BOX 2117, HOUSTON, TEXAS

▲ For more details circle NED-59 M on enclosed inquiry slip ▲

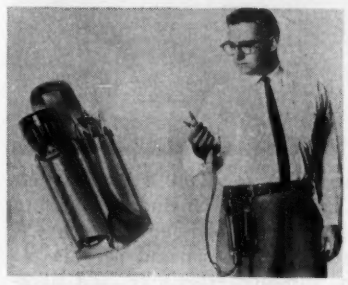
CUSHIONED BALL BEARING prevents transmission of vibration



Applications demanding quiet operation are served by this sleeve type cushioned ball bearing, available in ½ to 1 in. shaft sizes. The self-aligning ball and socket action helps reduce vibration caused by any slight shaft misalignment. A neoprene Ventlock cushion completely surrounds and shields the equipment from shaft vibration. Bearings can have either oil or permanent type lubrication and bushing materials of either sintered or solid bronze, grooved and graphited. • **Triangle Mfg. Co.**, 714-722 Division St., Oshkosh, Wis.

▲ For more details circle NED-61 M on enclosed inquiry slip ▲

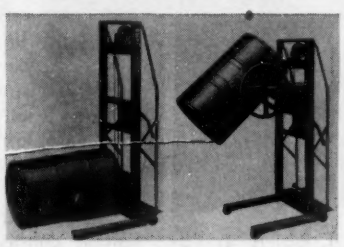
CONTINUITY TESTER & SPOTLIGHT offered in belt carrying case



Combination continuity tester and spotlight are now offered in a belt carrying case for convenience in checking wiring, controls, circuits, fuses, grounds, shorts, relays, switches, and alarm systems. Test leads use plug and clips for instant attachment. Tester is powered by a 3-v battery. Using two testers in series, wires and cables up to 5000 ft long can be checked at two different places, or where two men cannot see or hear each other. The No. 313 kit sells for $7.50; without carrying case, for $6. • **Bright Star Industries, Inc.**, 600 Getty Ave., Clifton, N. J.

▲ For more details circle NED-62 M on enclosed inquiry slip ▲

DRUM HANDLING EQUIPMENT handles horizontal, vertical drums



Drum to be dumped by the Blue Boy lightweight portable elevator is clamped in the dumper, raised, and rotated by a hand wheel to the desired angle at any height up to 48 in. It straddles the drum either on end or on its side or, with the use of standard forks, raises it for placement in a rack. Grab and tilting attachments are interchangeable. Winch and cable, foot pedal hydraulic, and battery operated hydraulic hoist systems are offered. • **Revolvator Co.**, 8701 Tonnele Ave., North Bergen, N. J.

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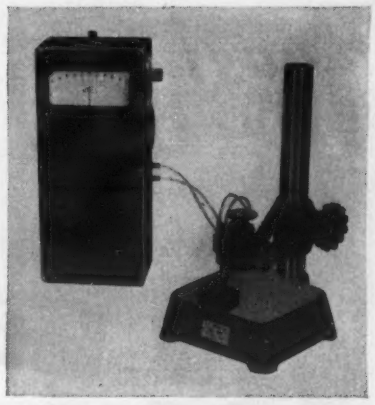


MODEL AG5 ACCU-FLOW AIR GAUGE

A general-purpose non-contact gauge for use as measurer or comparator on a variety of critical applications.

A new standard of accuracy . . .

ACCU-FLOW* by AMES

B. C. Ames has perfected a new concept of air gauging that offers extremely fine measurement and unusual stability.

AMES ACCU-FLOW air gauges give you an accurate non-contact measuring method that is ideally suited to checking size variations on continuous production items such as wire, rubber, plastics, etc. Send for free ACCU-FLOW folder.

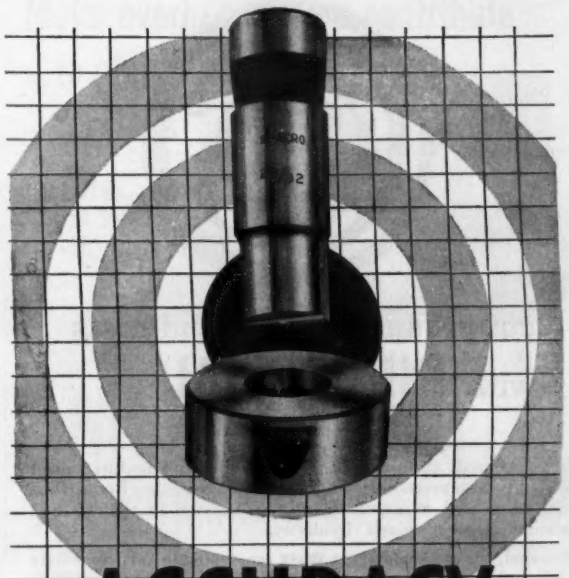
*Trademark of B. C. Ames Co.

Representatives in Principal Cities

B.C. AMES CO.
34 Ames Street, Waltham 54, Mass.
Canadian Representative—H. C. Burton Co. Ltd., Hamilton

MANUFACTURERS OF MICROMETER DIAL INDICATORS AND GAUGES

▲ For more details circle NED-64 M on enclosed inquiry slip ▲

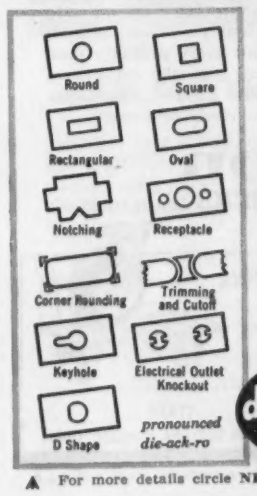


ACCURACY ASSURED

WITH DI-ACRO PRECISION PUNCHES AND DIES

Immediate Delivery from factory stock

Accurate hole location is easily achieved with Di-Acro Precision Punch and Die sets because the centering point on the punch is ground concentric to the cutting edges, there is no "slop" even when several holes are punched in a blank. Hole sizes are accurate due both to the high degree of concentricity of the punch and die set and the choice of clearance which allows you to obtain clean, burr free holes no matter what material thickness is to be perforated. All Di-Acro punches and dies are precision made of high quality tool steel.



For multiple hole punching ask about the new Di-Acro Adjustable Punch and Die Sets.

Over 500 standard sizes of Di-Acro Precision Punches and Dies in 12 standard styles are stocked. Punch Adapters and Die Holders are available to fit all styles of punch presses.

For extra convenience and savings order Di-Acro Punch Paks—fitted steel chests containing 24 and 30 sets of punches and dies.

Consult phone book Yellow Pages under Machinery—Machine Tools for your Di-Acro distributor or write for catalog and prices.

O'NEIL-IRWIN MFG. COMPANY
di-acro PRECISION METALWORKING EQUIPMENT
354 Eighth Avenue
Lake City, Minnesota

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NEW 16 oz. CAN 33% MORE INK
no increase in price

Proven Best for Stenciling Corrugated Cartons, Boxes, and All Other Shipping Containers.

Fast, Easy Stenciling on Steel, Wood, Paper, Fiber, Plastic, Stone, Glass and other Surfaces.

FAST • EASY • CLEAN STENCILING with REYNOLDS Instant Dry STENCIL INKS

• Unsurpassed for stenciling corrugated cartons, metal, paper, concrete, or other surfaces. Easy to hold aerosol container sprays a dense, compact cone of specially formulated waterproof ink. Very opaque. Dries instantly. 9 colors.

Get full details about Reynolds Stencil Inks; Stencil-Kover and other Specialty Products.

WRITE FOR BULLETIN NO. 601 TODAY.

REYNOLDS INK, Inc.
2077 East 65th Street • Cleveland 3, Ohio

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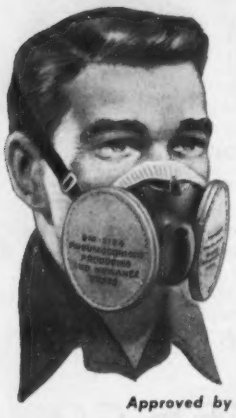
HAPPIER WORKMEN—BETTER WORK



DUPOR No. 46 RESPIRATOR

Big 46 sq. inch filter guards against pneumoconiosis-producing, toxic, poisonous and nuisance dusts. Can be worn with goggles or glasses. Adopted as standard by countless industries the world over. Complete protection for nose, throat, lungs. See your safety equipment supplier or order sample direct—$3.75 postpaid.

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H. S. COVER

Dept. 1205, South Bend 14, Indiana

"Respirators for Industry Since 1894"

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cut production time and costs with **INDUSTRIAL RETAINING RINGS**

Save material, eliminate costly machining and tooling, speed assembly with precision-made INDUSTRIAL Retaining Rings. They can be re-used over and over again because of their lasting resiliency and sustained circularity.

Internal, external and open types are available for immediate delivery in a wide range of sizes and finishes. Open-type rings are also available stacked for speedier assembly.

Write today for free ring samples and catalog.

IRR *Originators of modern retaining ring dispensing*

INDUSTRIAL RETAINING RING COMPANY

Dept. N-12, 57 Cordier Street • Irvington 11, New Jersey

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NEW TRUCK CATALOG *free for you now!*

A COMPLETE ONE-SOURCE GUIDE TO THE INDUSTRY'S ONE-SOURCE LINE OF FLOOR TRUCKS . . . HAMILTON!

Here in one big catalog are illustrations, complete data and specifications of Hamilton Floor Trucks in hundreds of styles, sizes and capacities for every ordinary (and extra-ordinary) materials handling job—the well-known Hamilton line, clearly shown in this colorful, easy-to-use catalog, cross-indexed for quick, ready reference.

Hamilton

Headquarters for **FLOOR TRUCKS** · Casters and Wheels

Send for your copy today!

NAME .....

COMPANY .....

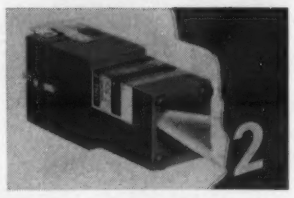
ADDRESS .....

CITY ..... ZONE ..... STATE .....

THE HAMILTON CASTER & MFG. CO., 1766 Dixie Highway, Hamilton, Ohio

▲ For more details circle NED-68 M on enclosed inquiry slip ▲

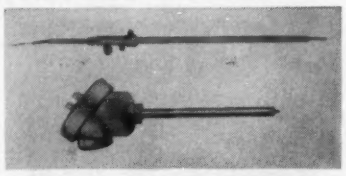
DIGITAL READOUT projects digit onto screen



Subpanel mounted, miniaturized Series 120000 digital readout mounted 13/16 in. behind a Lucite viewing screen is easily accessible for maintenance or replacement. Its 5/8-in. high digit is rear-projected onto the screen for viewing from any angle. Applications for the 3 1/8 x 1 x 1 5/16-in. unit are in digital computers, control equipment, instruments, and electrical test equipment. Subminiature lamp operates on 6 to 28 v. Single unit price is $35. • **Industrial Electronic Engineers, Inc.**, 5528 Vineland Ave., North Hollywood, Calif.

▲ For more details circle NED-69 M on enclosed inquiry slip ▲

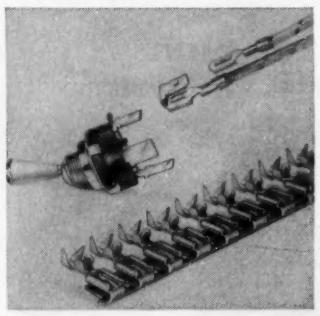
HIGH TEMPERATURE SENSORS thermocouple units range to 4000°F



Cooled and non-cooled types of thermocouple sensors are usable for measuring liquid, solid, and gas temperatures. Some can be used in oxidizing atmospheres up to 4000° F, and intermittently higher. Constructions include refractory metals such as tantalum and molybdenum with CR oxidation resistant coatings, magnesia and beryllia insulations, and iridium, tungsten, rhenium, and alloy thermocouple wires. Prices range from $100 to $600. • **Aero Research Instrument Co.**, 315 N. Aberdeen St., Chicago 7, Ill.

▲ For more details circle NED-70 M on enclosed inquiry slip ▲

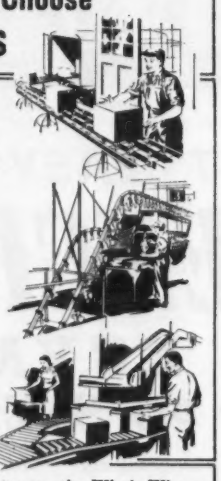
DOUBLE-DUTY TERMINAL provides multiple connections



Wiring of electrical equipment is facilitated with the No. 30000-H21AB double-duty, quick-connect terminal. Basically it is a female connector for attachment to male terminals of switches, timers, motors, sockets, relays, and other equipment. It also incorporates an integral male terminal to which another female connector or double-duty connector can be attached. Made of brass to UL requirements, its crimp-on section takes No. 18 to No. 12 wires with normal insulation. Connector is available individually or in continuous strips for automatic attachment. • **Ark-Les Switch Corp.**, 51 Water St., Watertown 72, Mass.

▲ For more details circle NED-71 M on enclosed inquiry slip ▲

For Cost-Cutting EFFICIENCY in Any Handling Job . . . Choose BUSCHMAN CONVEYORS



PORTABLES
Gravity, powered; roller, wheel, belt: all in standardized line. Quick-Eez Coupling all units permits many low-cost assemblies.

CABLE CONVEYORS
Adapt to many uses, speed production, cut costs. Overhead trolleys easily installed from in-stock units. Smooth running, durable, efficient.

COMPLETELY ENGINEERED
Buschman utilizes every type conveyor needed to make your handling economical, practical. Using Buschman plans and stocked parts, you can install.

Buschman engineering and equipment serve the Who's Who in Industry with all conveyor types. Our experience can help you. Tell us your problems; let us send literature and suggestions. The E. W. Buschman Co., 4482 Clifton Avenue, Cincinnati 32, Ohio.

Buschman CONVEYORS

Complete Conveyor Systems for all Types of Industries—Engineered, Manufactured, Installed
Representatives in Principal Cities

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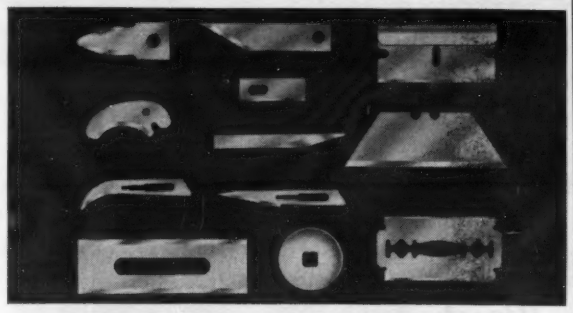

WHY RE-SHARPEN?

CRESCENT disposable knife blades are custom engineered to your specifications — made of Swedish surgical steels in any length required, width to 2 1/4 inches and thickness to 0.050-in.

CRESCENT disposable knife blades with razor-honed edges eliminate the cost of re-sharpening dull knives — give you higher production, more uniform product, greater efficiency, and longer cutting life.

CRESCENT engineers will solve your cutting problems, too. At no obligation, write and specify the type of knives you use, how many, what you cut, and how.

Write to: Engineering Department
CRESCENT MANUFACTURING CO.
Fremont, Ohio

▲ For more details circle NED-73 M on enclosed inquiry slip ▲

For Oily Abrasive Stampings—Scrap —Heavy Oily Abrasive Assemblies or Subassemblies

Under the Most Severe Conditions

Scandura BELTING will do the job best!

Check *THESE REASONS WHY!*

OIL RESISTANT—Scandura is unaffected by mineral oils. Can't swell. No plies to separate. Perfect for oily, greasy parts!

ABRASION RESISTANT—Polyvinyl cover resists abrasion amazingly—proves outstanding wearability on roughest, toughest jobs.

FLEXIBLE—Scandura flexes easily around small-diameter pulleys without sacrificing strength or wear.

FIRE RESISTANT—Certified fire resistant, Scandura is safe to operate in hazardous locations.

SOLID-WOVEN CONSTRUCTION—Interwoven carcass prevents ply separation, affords high fastening and tensile strength, resists stretch.

PVC IMPACT RESISTANT CUSHION—Polyvinyl chloride cover resists impact, is proof against moisture, dilute acids, alkalis, etc.

Scandura INC.

WRITE FOR THE FACTS TODAY!
North Tryon St. at Keswick Avenue
(P.O. Box 949) Charlotte 1, North Carolina

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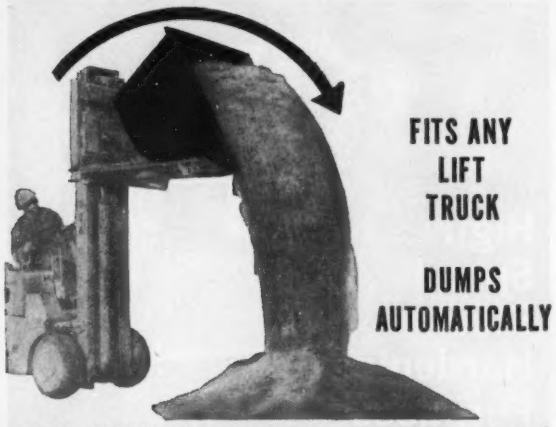


CAN CUT HANDLING COSTS 50%

With this self-dumping hopper one man can do the work of two, in a fraction of the usual time. Attached in seconds to any lift truck. Operator picks up loaded Hopper—transports it—releases latch. Hopper automatically dumps itself, rights itself, locks itself. Eight sizes, ½ to 4 yards capacity. Made of 3/16" steel plate, also stainless or galvanized. Standard models shipped from stock. Literature available on request.

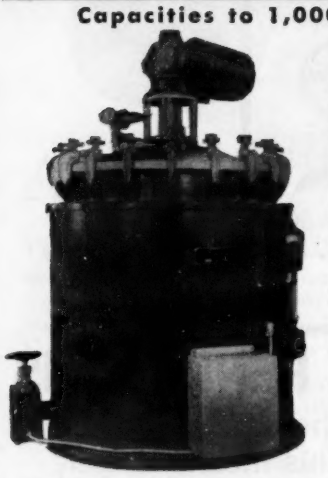
ROURA Self-Dumping HOPPER

ROURA IRON WORKS, INC.
1415 Woodland, Avenue,
Detroit 11, Michigan.

▲ For more details circle NED-75 M on enclosed inquiry slip ▲

Sta-Warm ELECTRICALLY HEATED LOW PRESSURE TANKS

Capacities to 1,000 GALLONS



FOR QUICK, EFFICIENT PRESSURE OR VACUUM IMPREGNATING, CONVEYING, OR SPRAYING SUCH COMPOUNDS AS PLASTICS, PITCH, WAXES, PARAFFIN, RESINS, ADHESIVES, POLYETHYLENES, ETC.

Sta-Warm engineers and builds a complete line of standard or special electrically heated vacuum tanks, melters, dispensers, mixing tanks and pots to meet your production line requirements.

100 MAPV – 100 GALLON – MOTOR AGITATED – LOW PRESSURE TANK

WANT A CATALOG? WRITE TODAY.

"If You Can Wrap a String Around It, Sta-Warm Can Heat It for You."

Sta-Warm ELECTRIC CO.
130 N. CHESTNUT ST., RAVENNA, OHIO
Subsidiary of ABRASIVE & METAL PRODUCTS CO.

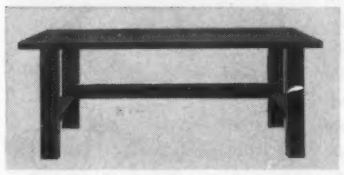
▲ For more details circle NED-76 M on enclosed inquiry slip ▲

TEMPERATURE REGULATOR for process water

Easily installed Model X009 water temperature regulator for control of process solution temperatures features a self-cleaning rotary check valve. It incorporates a large, easy-to-read thermometer. Temperature range is limited only by the hot and cold water supplies to which the regulator is connected to control the mixing. Price is $37.50. • Augustine Co., Marshalltown, Iowa.

▲ For more details circle NED-78 M on enclosed inquiry slip ▲

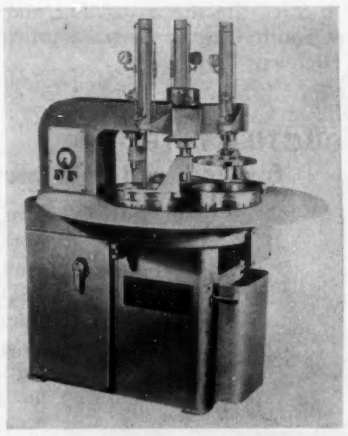
STEEL WORKBENCH has 30 x 72-in. top surface



Eleven-gage steel top, supported by 13-gage steel legs, is used on this heavy duty workbench. Available from stock, it has a 30 x 72-in. top surface and is 32 in. high. Bench is available in green or gray colors with drawers, bottom shelf, back, and end stops. Special sizes can be made to user's specifications. • Fort Steuben Metal Products Co., Box 268, Weirton, W. Va.

▲ For more details circle NED-79 M on enclosed inquiry slip ▲

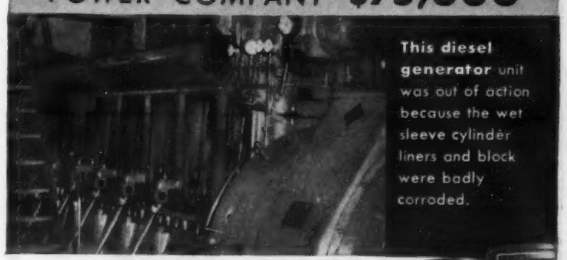
LAPPING MACHINE achieves 2-3 microinch rms finish



Redesigned, more compact version of the 24-in. Lapmaster, Model 24 permits efficient operation in a small space and has a large, wrap-around adjustable work table for loading or unloading of parts from any position. Machine production laps parts of almost any shape, form, or material within tolerances of one light band or less and produces uniform microinch finishes of 2 to 3 rms. New abrasive distribution system maintains correct mixture of compound to vehicle from initial filling to the last drop. It provides adjustable flow control and, through pressure pumping, assures uniform deposit at the lapping stations. Pneumatic lifts speed loading of small and medium size parts. • Crane Packing Co., Dept. ND-5, 6400 Oakton St., Morton Grove, Ill.

▲ For more details circle NED-80 M on enclosed inquiry slip ▲

PLASTIC STEEL® SAVED THIS POWER COMPANY $75,000



This diesel generator unit was out of action because the wet sleeve cylinder liners and block were badly corroded.

PLASTIC STEEL® A (Putty Type) was applied to the corroded areas, allowed to harden for 2 hours and ground smooth. No heat or welding was required. All of the liners were reinstalled — and now, 2 years later, the unit is performing at peak efficiency. Cost of material — only $10.00!

The strongest, toughest, most versatile repair and tooling material available today!

Plastic Steel, THE ORIGINAL EPOXY REPAIR MATERIAL, and other Devcon products are used by steel mills, chemical plants and many other industries for repairing worn parts, salvaging cracked castings, sealing leaking hydraulic systems and tanks — building up worn pumps and valves — altering cams and gears — repairing fuel and water lines — even under pressure. Approved under Mil. Spec. MIL-C-15202. Bonds iron, steel, aluminum, brass, bronze, wood, ceramic, etc. to itself or each other. Write today for free case histories.

DEVCON CORPORATION
141 ENDICOTT STREET, DANVERS, MASS.

A COMPLETE LINE OF QUALITY PRODUCTS FOR PERMANENT REPAIRS AND PLASTIC TOOLING.
Order a supply from your local Industrial Distributor today. Free catalog and engineering reports available on request.

Reg. U. S. Pat. Off.

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Make overhead space contribute to plant earnings

CAPACITIES ½ TO 5 TON

• SINGLE AND TWO SPEED MODELS

METEORS offer real materials handling help in many ways. Read all about their unusual operating advantages in the METEOR CATALOG *sent on request.* Illustrates all details of suspension and construction. Prices included.

CM HOISTS — CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND
In Canada: COLUMBUS McKINNON LIMITED, ST. CATHARINES, ONT.

▲ For more details circle NED-83 M on enclosed inquiry slip ▲

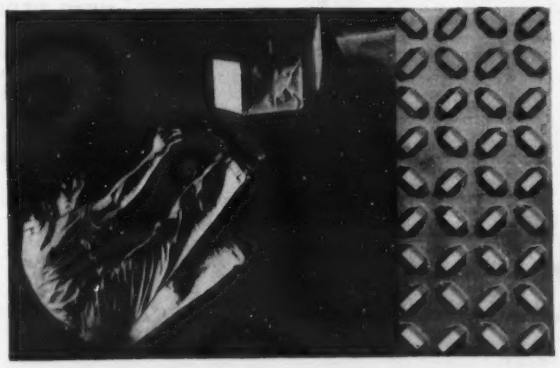
THIS FREE BOOK COULD HELP PREVENT AN ACCIDENT WHERE YOU WORK

You owe it to yourself, and the men you supervise, to learn all about the safety, comfort, and economy of USS Multigrip Floor Plate. This free booklet illustrates the many applications for Multigrip—from plant floors to derrick platforms to ship ladders. What you see in these pages may prevent an accident in *your* future.

Ask for the USS Multigrip booklet at your nearest Steel to United States Steel, Room 6181, 525 William Penn Service Center or U. S. Steel district sales office. Or write Place, Pittsburgh 30, Pa. *USS is a registered trademark*

United States Steel USS

▲ For more details circle NED-77 M on enclosed inquiry slip ▲



$100,000 for a fall!

It's true that slips cost more than Multigrip. Companies have been sued for $100,000 or more because of falls. Fortunately the average cost is less than this but many settlements run over $1,000.

Falls account for about 1 in 5 industrial injuries, but you can help eliminate many of the danger spots by starting a definite program of installing USS Multigrip Floor Plate on machine shop floors, aisles, cat-walks, stairs and other accident-prone areas. Multigrip is safe—wet or dry. It doesn't crack or splinter under heavy traffic and saves many maintenance dollars. Workers like it—and so does management. For information, write United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

USS and Multigrip are trademarks

Sold by leading distributors from coast to coast.

USS United States Steel

▲ For more details circle NED-81 M on enclosed inquiry slip ▲

Slips cost more than Multigrip

You can help eliminate many slips and falls by installing USS Multigrip Floor Plate in dangerous locations such as machine shop floors, runways, loading platforms, stairs and catwalks. There's no maintenance—it lasts indefinitely.

Multigrip Floor Plate has clean-edged, flat-top risers that give positive traction to feet and wheels. It's easy to clean; won't chip or crack even when traffic is heavy. United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania. *USS is a registered trademark*

Sold by leading distributors from coast to coast.

USS United States Steel

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Play it Safe in HAZARDOUS AREAS!

GEMCO
EXPLOSION•PROOF
ENCLOSURES

Protect hazardous areas in your plant *economically* with Gemco explosion-proof pushbutton stations and enclosures. Lightweight cast aluminum construction, Gemco modular construction permits special pushbutton stations containing 1 to 64 units in one enclosure.

Specials? Gemco *standard* enclosures are available with receptacles, viewing windows, *plus* pushbutton stations and control panels.

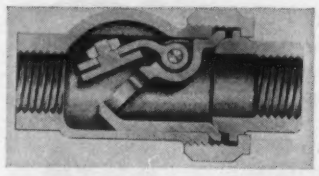
Design and construction; NEMA types 7 and 9.

Write today for Bulletin No. 659 on Gemco explosion-proof enclosures

GEMCO ELECTRIC COMPANY
25685 West 8 Mile, Detroit 40, Mich.

▲ For more details circle NED-86 M on enclosed inquiry slip ▲

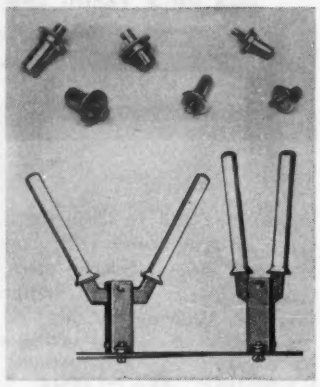
SWING CHECK VALVES
for pressures up to 250 psi



Union swing check valves are now offered with union or threaded flange connections for working pressures up to 250 psi. Both have a renewable disc unit insert and can be used in horizontal or vertical installations. Tight closure under a fraction of an ounce pressure is assured. Pipe sizes range from 1/4 to 2 in. • **Flomatic Corp.**, Hoosick Falls, N. Y.

▲ For more details circle NED-88 M on enclosed inquiry slip ▲

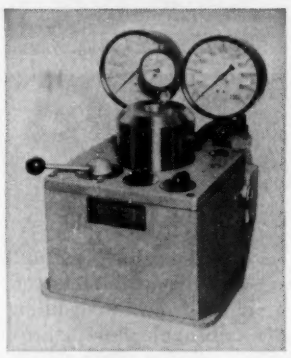
THIN-SHEET RIVETS
applied by pocket size tool



Thin, unsupported sheets are blind-fastened by Squeez riveting from one side with hand pressure applied by an inexpensive pocket-size plier type tool. The rivet used is made in 1/8 and 3/16-in. diameters with a nominal grip from 0.016 to 0.266 in. Its three-grooved pin drives the rivet which applies pull-up expansion to force the sheets together. Application tool exerts equal pressure against both work and blind sides to force the sheets together and prevent deformation. • **South Chester Corp.**, Southco Div., 200 Industrial Highway, Lester, Pa.

▲ For more details circle NED-89 M on enclosed inquiry slip ▲

DUCTILITY TESTER
for foil and thin metal sheet

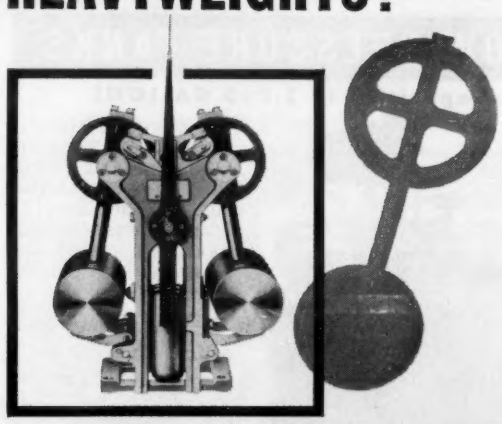


Five gage calibrations from 200 to 2000 lb are available in the Model TSD ductility testing machine for thin sheet metal and foil. Work ranging from 0.002 to 0.020 in. thick is quickly and accurately checked on an experimental or production basis. Gripping pressure and test piston movement may be adjusted to different levels independently of each other to fit the test conditions. (*Editor's Note: This item appeared in the November* 1960 *issue with the wrong picture*). • **Detroit Testing Machine Co.**, 9390 Grinnell Ave., Detroit 13, Mich.

▲ For more details circle NED-90 M on enclosed inquiry slip ▲

▲ For more details circle NED-92 M on enclosed inquiry slip ▲

HEAVYWEIGHTS!



DETECTO PENDULUMS
are the heaviest in the industry. This means longer, more accurate scale life.

Write for information on full line of industrial weighing equipment from 1/100 oz. to 100 ton:
Detecto Scales, Inc., Dept. D-5, 540 Park Ave., Brooklyn 5, N. Y.

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color code enamels
marking enamels
ASA machinery gray enamels
wrinkle finishes
high-heat aluminum
zinc chromate primer
gray primer-surfacer

CHECK LIST

open gear and wire rope lubricant
light oil lubricant
penetrating oil
dry graphite lubricant
all-purpose silicone lubricant
clear plastic
silicone mold release
red insulating varnish-enamel
battery terminal-protector
blue layout fluid
layout fluid remover
anti-rust spray
electric motor degreaser
engine degreaser
Jet-Pak self-powered spray gun

Which of these self-spraying products can you use?

CHECK THE LIST—THEN PHONE YOUR DISTRIBUTOR!

Single brand—single source
ONE CALL—THAT'S ALL!

The first **complete** line of industrial aerosols—your key to "push-button maintenance." Stocked and sold only by industrial distributors to give you quick service! Phone your distributor today for free handbook of 47 different maintenance and production aids in self-spraying containers—the better, faster, safer, cleaner, easier way to do a hundred jobs! Made by the oldest and leading custom-loader of aerosol specialties. If your distributor cannot supply you, write **Industrial Supply Division, Sprayon Products, Inc., 2063 East 65th Street, Cleveland 3, Ohio.**

Sprayon AEROSOLS FOR INDUSTRY

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NEW! OSBORN MASTER BLEND* POWER BRUSHES. You have never used a power brush like this before! MASTER BLEND is a totally new concept in brush construction—fast-action straight wire cutting points blended with a tough plastic bond. Result: an exceptional power brushing tool that keeps its sharp profile for high-precision finishing throughout its long life. Won't flare out. Can't rip or tear. Won't load up. Has extraordinary cutting power. Edge-blends and deburrs perfectly, no compound required. On-the-job tests prove MASTER BLEND finishes more parts per hour, more parts per brush. Outperforms. . . outlasts . . . any other power brush available today.

breakthrough in metal finishing!

Typical MASTER BLEND Applications: Removing flash from die-cast zinc and aluminum parts • Deburring and edge-blending fine pitch gears and powdered metal parts • Removing flash from plastic parts • Deburring and edge-blending parts formerly requiring use of compound • Minimum edge-blending of clad metal parts without contacting adjacent surfaces.

Send for free MASTER BLEND Brush folder
"Breakthrough" Folder MB-100 shows how new MASTER BLEND Brushes can handle your most critical metal finishing jobs. Gives sizes, specifications, application data. Write or call The Osborn Manufacturing Company, Dept. N-22, Cleveland 14, Ohio. Phone ENdicott 1-1900.

OSBORN

Metal Finishing Machines . . . and Finishing Methods • Industrial Brushes • Foundry Production Machinery

*Trademark

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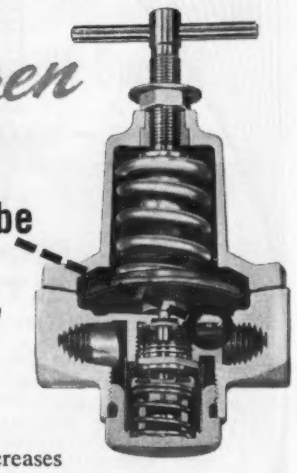
All pressure regulators are not alike.



Norgren

Baffle and Siphon Tube Construction

provides more uniform regulated pressure as flow demand changes

This Norgren feature increases the sensitivity of the valve to changes in the flow rate through the regulator and provides better performance and a more uniform regulated pressure over a wide range of flow rates.

Write factory for descriptive literature

C. A. NORGREN CO. FOUNDED IN 1926

3405 SOUTH ELATI STREET • ENGLEWOOD, COLORADO

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Q. WHAT IS IT? WHAT'S IT FOR?

A.

Frankly, we don't know. The customer didn't tell us. But he wanted 1,000, and we made them at an amazingly low cost. Special sizes and shapes of shop boxes are economically produced by our "Chem-Board" process of rigidizing hi-test corrugated board to remarkable strength.

We make many standard size tote boxes . . . nesting, stacking and vertical sided . . . but we'll custom-make any box your product or use calls for.

More and more famous name industries are using Convoy Tote Boxes. Try us.

CONVOY, INC.

CANTON 6, OHIO

P. O. Station B, Box 216-N

GReenwood 7-4569

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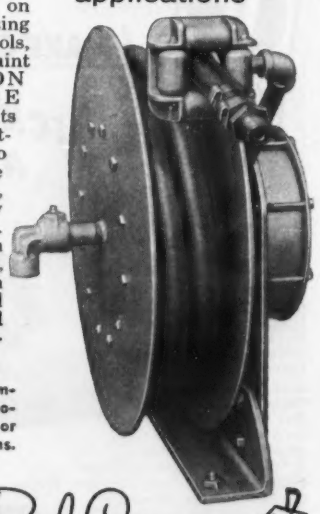
GLEASON AUTOMATIC HOSE REELS

save hose replacement costs in LIQUID, AIR, GAS applications



Wherever hose must be stretched, lifted, retrieved, on production equipment using liquid, air or gas — air tools, air chucks, blow guns, paint guns — A GLEASON AUTOMATIC HOSE REEL more than pays its way. Delivers uninterrupted pressure from 150 to 3000 p.s.i., handling hose up to 70 feet in length, keeps hose out of the way of damage and extra wear. All steel construction, with non-revolving spring motor, ball bearing action with holding dog action to hold the hose in any desired position. Two-Way pay-out feature.

Write for your copy of new Complete Catalog on Gleason Automatic Take-Up HOSE REELS — or for engineering recommendations.

Gleason Reel Corp

800 Horicon St., Mayville, Wisconsin

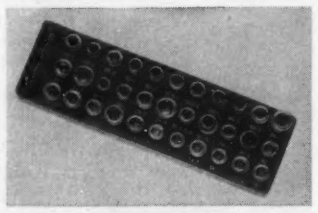
Dept. A

SPRING REEL HEADQUARTERS FOR ALL INDUSTRY

▲ For more details circle NED-96 M on enclosed inquiry slip ▲

FAUCET SEAT GAGE

facilitates replacing worn seats

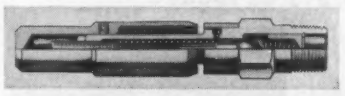


The exact size and type of removable faucet seat to replace a worn, pitted, or corroded seat is readily determined with this gage. Made of anodized aluminum alloy, it has 33 different size tapped holes with easy-to-read markings to guide selection of the proper seat. • **J. A. Sexauer Mfg. Co.**, 2503-05 Third Ave., New York 51, N. Y.

▲ For more details circle NED-97 M on enclosed inquiry slip ▲

LOW PRESSURE WARNING

device for use in air systems



Air chucks and clamping fixtures, instrument or control air systems, dry sprinkler systems, air pressures, air clutches and brakes, and air tools are served by the Airlarm low pressure warning device. The automatic, self-contained mechanical unit emits a shrill whistle when air system pressure drops below a predetermined level. It automatically shuts off when proper pressure is restored. Made of aluminum and brass, it is 4½ in. long and is easily installed at any point in the air line. It can be preset through a wide range of pressures. • **Roney, Inc.**, 105 Cole St., Dallas 7, Tex.

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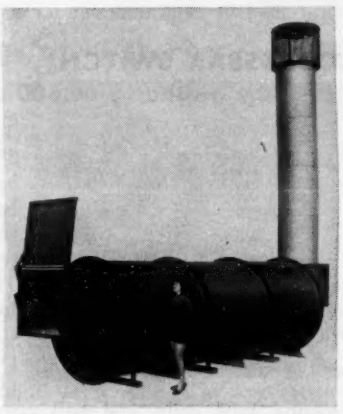
INCINERATOR

burns trash without smoke or odor



Severe strains of expansion and contraction are eliminated by the tubular design of the Combustion Tube incinerator, made in capacities from 150 lb per hour upward. Auxiliary burners are not required for disposing of trash that includes up to 25 per cent garbage. Downfire burning reduces burnable trash to a fine white ash that is easily removed with vacuum. Disposal of large and small loads is without smoke, odor, or fly ash. Incinerator is made of individually flanged sections of electrically welded steel, assembled with four bolts. • **Silent Glow Oil Burner Corp.**, Disposal Div., 818 Windsor St., Hartford 1, Conn.

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Synthe-Seal® BEARINGS IN

MARLIN-ROCKWELL RELIABILITY COUNTS

BACKED BY 62 YEARS EXPERIENCE IN THE MANUFACTURE OF BALL BEARINGS

Send for FORM 1528 listing sizes

MRC BALL AND ROLLER *bearings*

Marlin-Rockwell Corporation

Jamestown, N. Y.

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Chip Away

SCALE RUST PAINT

AURAND

CLEANING TOOLS

ELECTRIC OR PNEUMATIC MODELS

Surfaces are cleaned quickly with AURAND on the job. Hardened steel cutters zip away stubborn accumulations from iron, steel, brick, concrete. Adjustable depth shoe protects surface . . . assures uniform cleaning. No special skill required. Renewable cutter heads. Two sizes in both electric and pneumatic models. Lightweight.

AURAND MFG. & EQUIPMENT CO.

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Canadian Distributor:

E. R. Peerless, Ltd.

5934 Fraser St., Vancouver 15, B. C.

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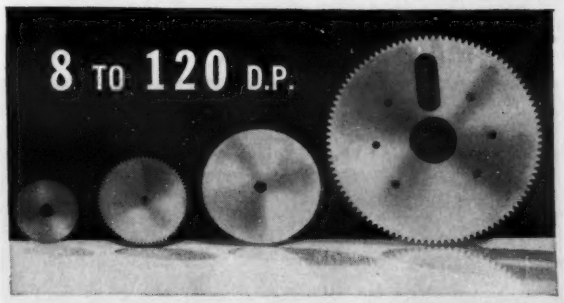

LONG LIST OF STOCK GEAR DIES OFFERS YOU BIG SAVINGS!

ACCURATE STAMPED GEARS by *WINZELER* are BIG savers of time and money. Single stampings are laminated to wide faces at savings up to 60%! Further economies are made possible by a BIG range of *stock* Dies. Modern new plant, methods, and equipment now greatly increase production speed, efficiency and *economy!* Send blue prints. Tell us about your needs today. No obligation.

SEND FOR...

New list of WINZELER-made stock Gear Dies. Ask for it on company letterhead, *please!*

WINZELER *Stamped Gears*

WINZELER MANUFACTURING & TOOL CO.

7355 W. WILSON AVENUE • CHICAGO 31, ILLINOIS

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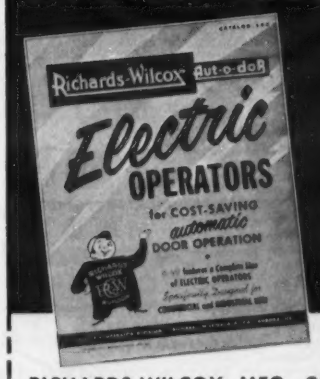
NEW **CATALOG**

DESCRIBES R-W ELECTRIC OPERATORS FOR DOORS & GATES!



R-W offers a complete line of top-quality Electric Operators for doors and gates specifically designed to meet the rugged demands of industrial use. Whether it swings ...slides ...raises or folds—R-W can open it—*automatically*.

MAIL COUPON TODAY

RICHARDS-WILCOX MFG. CO.

435 WEST THIRD STREET

AURORA, ILLINOIS

Please send, without obligation, my free copy of Catalog No. 200.

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FIRM _____

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HYDRAULIC

REMOTE CONTROL

SYSTEMS

Completely self-contained . . . single tube . . . remote control eliminates use of compensators. Rugged and reliable . . . used in engine, machine tool and many other factory applications . . . wherever positive, accurate, instant duplication of movement is needed . . . no "sponginess."

EASILY INSTALLED

Sperry CONTROLS

HYDRAULIC REMOTE CONTROLS

Representatives in Principal Cities

SPERRY PRODUCTS CO. • 1712 SHELTER ROCK RD. • DANBURY, CONN.

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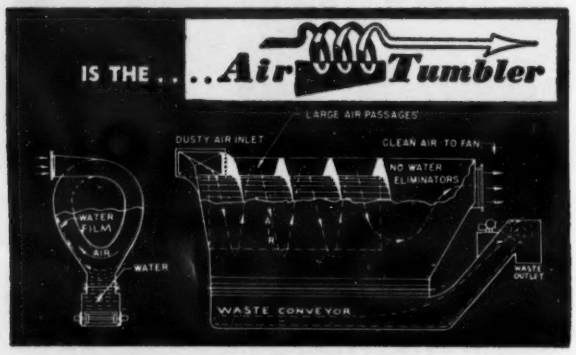
The MASTER of DUST in INDUSTRY



The Wet Collector that becomes Standard Equipment wherever tried because it does a better job at less cost.

More than one million CFM in ONE plant

Write for Bulletin No. 601. Address:

DUST SUPPRESSION & ENGINEERING CO.

P. O. BOX 67 • LAKE ORION, MICHIGAN

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Here's

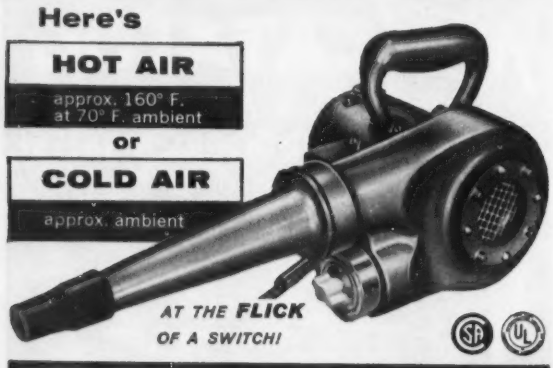
HOT AIR

approx. 160° F. at 70° F. ambient

or

COLD AIR

approx. ambient



AT THE FLICK OF A SWITCH!

CLEMENTS Cadillac® MODEL L7

QUIK-HEAT HOT OR COLD AIR BLOWER

Portable, practical for drying insulation in motors, cables, electronic equipment, delicate switchboards, terminal boards, newly dyed textile samples . . . you name it! Ideal for drying out rubber boots . . . increases worker morale. With heating element off, you enjoy the extra advantage of a regular blower for cleaning with approximately room temperature air.

DEPENDABLE, ECONOMICAL

Use it wherever warm dry air is required.

ASK FOR BULLETIN

SINCE 1910 *Industrial Products Division*

CLEMENTS MFG. CO.

6627 South Narragansett Ave., Chicago 38, Illinois

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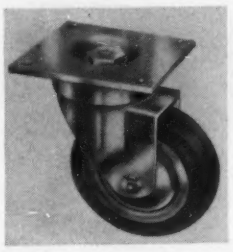
CASTERS in 4, 5, 6, and 8-in. wheel sizes



Both swivel and stationary models are offered in 90-Series casters which include 4, 5, 6, and 8-in. wheel sizes. All wheels are equipped with caged hardened and ground roller bearings with hardened spanner bushings. Caster and wheel are fitted for pressure lubrication. Casters have zinc plating and are finished in Laguna Blue lacquer. They are also available with a positive-locking brake. • **Darnell Corp.**, 12000 Woodruff Ave., Downey, Calif.

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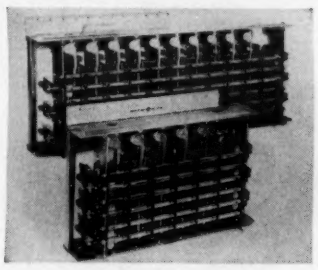
SOLDER DISPENSER weighs only 5½ oz loaded

Teflon coating applied to the inner surface of the improved lightweight Kormat solder dispensing tool minimizes friction and the force required to feed the solder. The die cast aluminum model is 50 per cent lighter than the standard model, weighing only 5½ oz loaded. It uses a self-contained bobbin of wire solder, usually a 2-day to 2-week supply, and has a small hole at the back to permit use of bulk solder from 50-lb reels. Probe tips in a variety of sizes and curvatures are optional extras. Amount of solder fed through the tip is regulated by a knurled feed control. Lightweight dispenser is priced at $6.95. • **International Electronic Research Corp.**, Commercial Products Div., 135 W. Magnolia Blvd., Burbank, Calif.

▲ For more details circle NED-108 M on enclosed inquiry slip ▲

CROSSBAR SWITCH has capacity of 600 circuits



The 14 5/16 x 8¾ x 5⅜-in. space required for this compact crossbar switch is little more than one-half that of the 1200-circuit model. This 600-circuit model has a five by twelve coordinate arrangement, with 10 contacts per cross point, double-wound hold coils, and ball bearing pivot pins. Applications include analog and digital computer functions, machine tool control and programming, and automatic test programming. Bifurcated springs with silver alloy contacts assure contact life of over 50 million operations. Price is $250. • **North Electric Co.**, Galion, Ohio.

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Loosens FROZEN PARTS FAST!

Handy
Won't Leak
Shoots 3 Feet

Same formula as famous Kroil that has pleased 14,000 industrial users for 10 years or more.

Loosens stuck together metal parts, bushings, bearings, bolts, screws, pipe, etc., "anything from an embalmer's needle to a bulldozer," one customer said.

"Like an extra employee," said another. "Turned rust into mush, put $50,000 equipment back to work."

You too can get these results.

Try Aerokroil at our risk. Send $2 cash, and we'll pay postage.

12-OZ. CAN $2. F.O.B. NASHVILLE CASE OF 12 $18.75

KANO LABS. 1074 Thompson Lane Nashville 11, Tenn.

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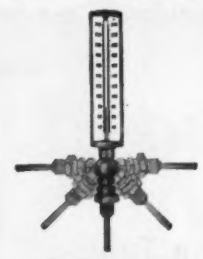

No. 1 SPACE STRETCHER

"Inner space" problems are sometimes more baffling to to engineers, architects and contractors than those concerned with "outer space."

That needed inch or two amid the usual maze of pipe, conduit, tube and cable is worth its size in gold!

Where space is a factor, that's the place for Weksler ADJUST-ANGLE* Thermometers. These versatile instruments, supplied in four case sizes, meet every installation requirement. The exclusive Weksler ADJUST-ANGLE feature permits positioning of stem or case to fit any space.

MORE THAN A HUNDRED THOUSAND ADJUST-ANGLE INSTALLATIONS!

Write for complete information

WEKSLER INSTRUMENTS

WEKSLER INSTRUMENTS CORP.

FREEPORT, L.I., NEW YORK

INDICATING AND RECORDING INSTRUMENTS FOR TEMPERATURE, PRESSURE, AND HUMIDITY

*PATENTED

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USA-made Southern fasteners are sold by leading distributors throughout the nation. These sources are supplied from Southern's amply stocked warehouses in New York, Chicago, Dallas, and Los Angeles, or from our stock of over 1,500,000,000 fasteners at the factory and main warehouse in Statesville, N. C.

Southern's Stock List will guide you in the selection of standard items immediately available from stock. Contact your Southern Screw distributor, or write, on your company letterhead to: Southern Screw Company, P. O. Box 1360, Statesville, N. C.

Machine Screws and Nuts • A, B, C, & F Tapping Screws Stove Bolts • Wood Screws • Type U Drive Screws Carriage Bolts • Continuous Threaded Studs • Head Styles in: Slotted and Phillips; Flat, Round, Oval, Pan, Binding, Truss, Fillister, Washer, Hexagon and Hex Washers.

YOUR BEST SOURCE FOR STANDARD FASTENERS

Southern SCREW COMPANY STATESVILLE • NORTH CAROLINA

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BEVERLY THROATLESS SHEARS

MAKE CUTS LIKE THESE

QUICKLY... EASILY... ACCURATELY

18 ga. metal cut with Model B-1 Shear.

Save time, labor and material—use a Beverly to make any cut . . . straight, curved or irregular in any metal. Exclusive design allows work to be turned at any angle while cutting. Standard in the industry for years. 4 models—capacities to ⅜" mild.

See your Beverly Distributor for a demonstration. Write for FREE illustrated circular on Beverly metal cutting Shears.

MODEL B-3 with ball bearing hold down. Cap. ⅜" mild; 10 gauge stainless.

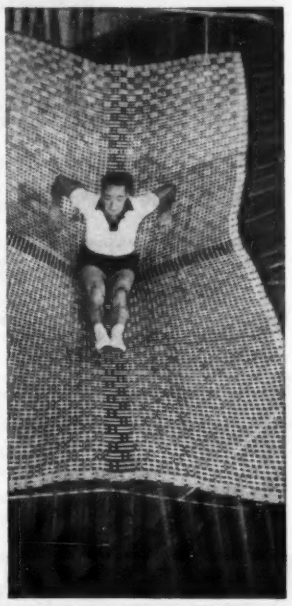
Beverly SHEAR MFG. CO.

3016 W. 111th STREET • CHICAGO 43, ILLINOIS

▲ For more details circle NED-113 M on enclosed inquiry slip ▲

the ups and downs of
USS American Quality Springs

Ever marvel at a bouncing acrobat on a trampoline? Well, part of the secret of his agility is in the resiliency of the steel springs which support the mat. USS American Quality Springs are used in countless applications where long life and dependable service are necessary. Ask us for technical advice on any spring use.

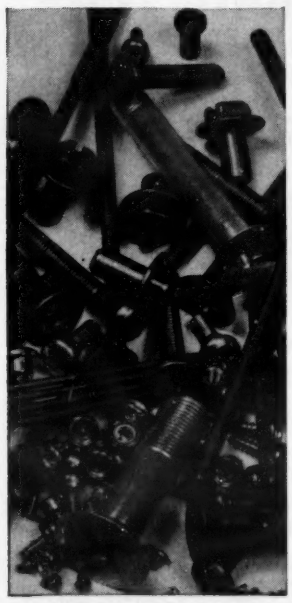


American Steel & Wire Division of United States Steel

USS

▲ For more details circle **NED-114 M** on enclosed inquiry slip ▲

for fasteners by the millions—
USS American Cold Heading Wire



The largest manufacturer of recessed head fasteners turns out 14 million a day! For their Phillips Head Fastener, American Steel & Wire developed a special cold heading wire hard enough so that it wouldn't buckle, yet tough enough so that it wouldn't split when the powerful Phillips die rammed into it. Our men are at your service to help you find better ways to solve your production problems.

American Steel & Wire Division of United States Steel

USS

▲ For more details circle **NED-115 M** on enclosed inquiry slip ▲

USS American Quality Wire
packaged the money-saving way

Now you can get USS American Quality Wire in heavyweight coils, unitized coils, pay-off drums, disposable spools and platform coil carriers. Whatever your problems, there's an up-to-the-minute American Steel & Wire wire package to speed up handling and save storage space. For more information, contact our representative or write direct to American Steel & Wire, 614 Superior Ave., N.W., Cleveland 13, Ohio.

American Steel & Wire Division of United States Steel

USS

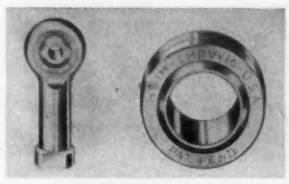
▲ For more details circle **NED-116 M** on enclosed inquiry slip ▲

SURFACE REPLICA KIT
permits checking inaccessible areas

Surface finishes to be inspected on a Talysurf or interferometer are accurately reproduced with this Replica Kit. It contains 24 jars of powder and 24 ampules of mixing liquid, together with solvent, Plasticine, steel file, and mixing sticks. It cannot mar or harm delicate surfaces, and makes possible the checking or measuring of surfaces after polishing, milling, grinding, turning, or other finishing operations. • **Engis Equipment Co.**, 431 S. Dearborn St., Chicago 5, Ill.

▲ For more details circle **NED-117 M** on enclosed inquiry slip ▲

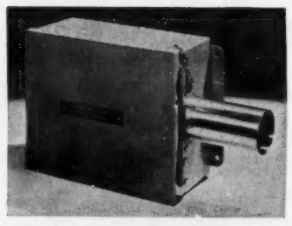
ROD ENDS & BEARINGS
Teflon lining supplies lubrication



Externally and internally threaded rod ends and plain spherical bearings are available, when specified, with a Teflon woven fabric lining. This bearing surface provides high inherent load ratings, self-alignment, and long wearing, low friction, self-lubricating, and high impact properties. Fabric is inseparably bonded to the substrate, and a mechanical interlock between the liner and outer bearing member prevents break-away. Wide range of sizes and materials is available. • **Heim Co.**, Dept. NED, 46 Sanford St., Fairfield, Conn.

▲ For more details circle **NED-118 M** on enclosed inquiry slip ▲

INFRARED RELAY
detects temperature changes



Mounted remote from hot object it observes, the Model 5121 Infra-Ray relay will actuate water sprays, take-up reels, pouring devices, furnace doors, conveyors, shears, counters, or other auxiliary equipment. The sensitive, directional, and adjustable heat sensing device has normally-open or normally-closed relays. Its optical system and detector element provide a discriminate field of vision about 12 in. square at a distance of 20 ft, or 6 in. square at 10 ft. At maximum sensitivity setting, the relay is energized by a 1 in. square object at 10 ft, at a temperature of 1100° F, and moving about 6 ips. The 15 x 8¼ x 4¼-in. relay remains energized as long as the object remains in the field of vision. Single-pole double-throw contacts are rated 1 amp, 115 v ac. Operation is on 115 v ±10 per cent. • **Daystrom, Inc.**, Weston Instruments Div., 614 Frelinghuysen Ave., Newark 12, N. J.

▲ For more details circle **NED-119 M** on enclosed inquiry slip ▲

Know what you want? You can get it in
USS Cold-Rolled Amerstrip

USS Amerstrip brings you 6 distinct advantages that can lead to new production and sales possibilities: precision finish . . . in addition to the regular slit edge and natural round edge . . . precisely prepared edges (standard round, full round, or square) . . . precise and uniform tempers . . . exact thickness tolerances . . . precise width tolerances. And you can get USS Amerstrip in a variety of attractive finishes—plain or embossed.

American Steel & Wire Division of United States Steel

USS

▲ For more details circle **NED-121 M** on enclosed inquiry slip ▲

USS Amer-Led Cold Finished Bars
for fast, accurate machining!

These padlocks were made from USS Amer-Led Cold Finished Bars. This high-grade lead-bearing steel permitted faster machining, more accurate forming . . . and resulted in fewer rejects. Amer-Led free-machining steel gives higher machining speeds with little loss in tool life.

USS Amer-Led is just another of the fine-quality manufacturers' products available from American Steel & Wire.

American Steel & Wire Division of United States Steel

USS

▲ For more details circle **NED-122 M** on enclosed inquiry slip ▲

Quality products
call for quality wire, strip and bars from
American Steel & Wire

As the country's largest manufacturer of wire and strip, we offer a single source of supply for all your wire, strip and bar needs.

Our modern facilities assure products uniform in quality and made exactly to specification.

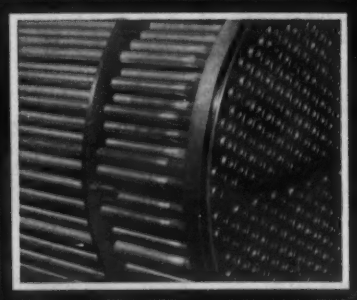
Our experienced sales and engineering representatives are at your service to assist in determining how our wire, strip and bars can help make your product better.

For more detailed information, get in touch with our nearest district office. Or write American Steel & Wire, 614 Superior Avenue, N.W., Cleveland 13, Ohio.

USS, American, Amerstrip and Amer-Led are registered trademarks

USS **American Steel & Wire Division of United States Steel**

▲ For more details circle **NED-120 M** on enclosed inquiry slip ▲



Transferring Heat?

See Page 91

▲ For more details circle NED-123 M on enclosed inquiry slip ▲

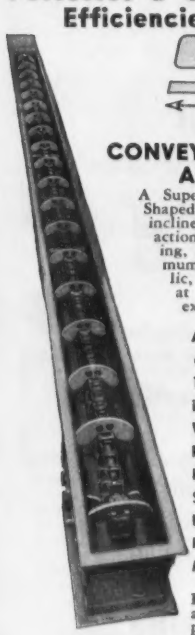
NEW "CLOSE CLUSTER" DIE PROCESS CUTS BRAZING PREFORM WASTE, SAVES YOU MONEY!

Scrap means waste. And that adds to the cost of your silver brazing preforms. Precision dies arranged in a "close cluster" make maximum use of every inch of silver brazing or precious metal strip. This cuts waste, saves you money. Developed originally by Alloys Unlimited for the semiconductor industry, this new technique of "close cluster" stamping makes other methods old fashioned. Start saving . . . Send us your specifications, then compare our bids with your present costs. No obligation, of course.

Alloys Unlimited, Inc., 21-01 43rd Ave., Long Island City 1, N. Y.

▲ For more details circle NED-124 M on enclosed inquiry slip ▲

Possesses a Combination of Engineering Efficiencies That Make it Great!



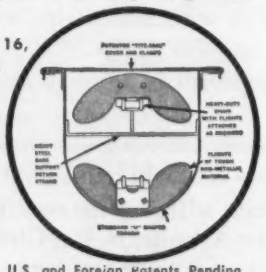
Super-Flo TRADE MARK

CONVEYOR

CONVEYS SMOOTHLY—EFFORTLESSLY AND WITH POSITIVE PULL

A Super-Flo Conveyor operates within a single "U" Shaped Trough, handling material horizontally or up an incline without transferring to another conveyor. Its action is gentle despite its high capacity . . . no crowding, chopping or choking. Degradation is at a minimum. Works tirelessly! Flights are a special non-metallic, non-breakable material needing no reinforcement at the chain. Flights conform to contour of trough exerting a wiping action that keeps trough clean.

AVAILABLE IN 6, 9, 12, 14, 16, 18, 20 and 24 in. TROUGH WIDTHS — IN REGULAR OR HEAVY-DUTY STEEL, STAINLESS OR NON-FERROUS METALS



U.S. and Foreign Patents Pending

Discharges at any required location, hand, rack and pinion or air operated. Trough is completely enclosed with "Hammond Tite-Seal" Cover and Clamps for easy access.

Write For Bulletin SF-659-A Today

SCREW CONVEYOR CORPORATION 719 HOFFMAN STREET HAMMOND, INDIANA

Southern Plant WINONA, MISSISSIPPI — West Coast Plant SANTA CLARA, CALIFORNIA

Branch Offices: Hackensack, N. J. Dallas, Texas Memphis, Tenn. Tampa, Florida

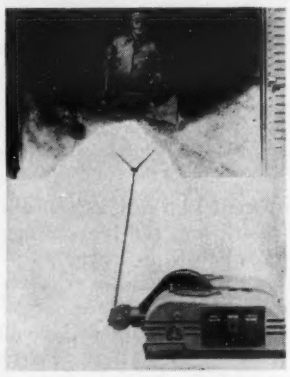
▲ For more details circle NED-125 M on enclosed inquiry slip ▲

PNEUMATIC TIRED WHEELS for low speed, light duty uses

Various hub and bearing combinations ranging in diameter from 5/8 in. upward and hub lengths up to 7½ in. using 8-in. pneumatic tires are available in this line of industrial wheels. They are designed for moderate speed, light duty applications. All have stamped drop center rims with the hub welded into a single assembly. • **Kelsey-Hayes Co.**, French & Hecht Div., 523 E. Third St., Davenport, Iowa.

▲ For more details circle NED-126 M on enclosed inquiry slip ▲

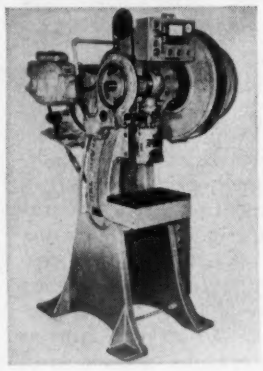
POWER WINCH-SCRAPER for moving dry bulk materials



The Elba Winchdozer allows one man to move 40 to 60 tons of dry bulk materials per hour, or to unload a box car without assistance. Operator places a scoop behind the material to be moved and presses a switch. Winch pulls the scoop in the desired direction. An electromagnetic clutch in the winch responds to controls in the scoop handle, giving operator complete control. • **Burrows Equipment Co.**, 1316 Sherman Ave., Evanston, Ill.

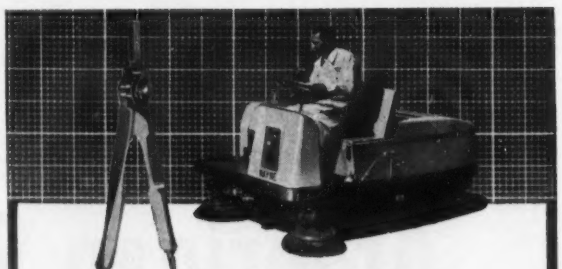
▲ For more details circle NED-127 M on enclosed inquiry slip ▲

HIGH SPEED PRESS both cuts and forms metal



Electronic components as well as electrical, automotive, and aircraft parts can be made to rigid specifications on this high-speed industrial press which both cuts and forms metal at speeds to 1000 strokes per minute. Stroke adjustment enables press to perform functions ordinarily requiring two or more standard presses. Because flywheel is mounted on a centrifugal force stress absorber, worn bearings are eliminated and strokes are uniform. Press is available in sizes from 1 to 135 tons. • **Dechert Dynamics Corp.**, 713 W. Main St., Palmyra, Pa.

▲ For more details circle NED-128 M on enclosed inquiry slip ▲



Does Your Present Sweeper Measure up to WAYNE?

If you are using old-fashioned sweeping methods, look at the money-saving advantages of *modern Wayne Power Sweeping*...

- **One man and a Wayne can sweep up to 60,000 square feet of plant area *per hour*.**
- **There are no dust bags to empty. Dust is handled automatically by Wayne's exclusive Filter-Vac system.**
- **A Wayne sweeps more area because it has the largest *usable* hopper capacity of any sweeper.**
- **Quick broom changes let you match the broom to the work—get *all* plant areas super-clean.**

Then add: better visibility, ample power, automotive controls, hydraulic dumping—all of which put Wayne head and shoulders above the rest for plant maintenance, inside and out, *the modern way*.

Get a *Modern* Power Sweeper—*Wayne! Write for literature*

WAYNE MANUFACTURING CO.
3377 East Lexington St., Pomona, Calif.
POMONA • CHICAGO • NEWARK

▲ For more details circle NED-129 M on enclosed inquiry slip ▲

IT WAS A STEP FORWARD

When granpa changed from the

Old Flat Drill to the

Modern Twist Drill

IT WILL BE ANOTHER STEP FORWARD

When YOU change from the

Old Hook Type Boring Tool to the

Modern Precision Boring Tool

WITH the old type of tool the clearance is usually ground by hand; even an experienced operator finds it difficult to control the clearance angles.

With the Precision Bokum Boring Tool the proper clearance is built into the tool. All resharpening is done from the top surface only, in this respect the tool is like a form tool wrapped around a shank, the curvature being such that the clearance angle remains constant throughout the life of the tool. As with any form tool the life of the Bokum Boring Tool is many times that of an ordinary tool.

Available: Wide range of sizes for boring holes from 1/16" dia. up . . . in super high speed steel and Carbide Tipped.

For general boring, use Style A • For facing and bottoming, use Style B
For internal threading, use Style C

Dept. T.

TRADE MARK REG. U.S. PAT. OFF.

BOKUM TOOL CO. INC.
14775 Wildemere Ave., Detroit 38, Michigan

▲ For more details circle NED-130 M on enclosed inquiry slip ▲

FEDERAL

SHORT RUN STAMPINGS — 3 PLANTS To Serve You Better

Freddy Federal says: "Behind every Federal stamping quotation stand the cost-cutting resources of modern one-stop facilities . . . experienced craftsmen personally interested in your satisfaction . . . and a big stock of standard tools and fixtures available for use on your job *without charge*. You often save up to 80% on tooling costs at Federal! Most parts deburred *without cost*. Send us your print or part today for an airmailed quotation. If time is short, ask for reply by phone or wire. To get the most at the right price, always contact Federal!"

Let us send you catalog No. 301 with money-saving stamping design tips!

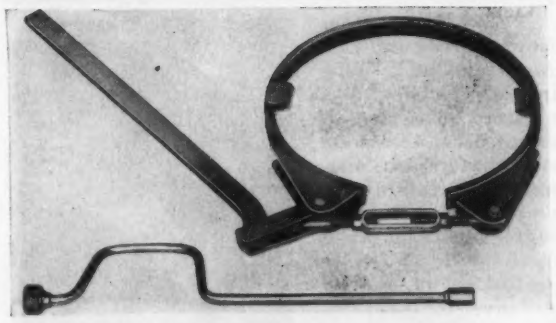
FEDERAL TOOL & MFG. CO. 3618 Alabama Avenue Minneapolis 16, Minn.

FEDERAL SHORT RUN STAMPING, INC. 918 Lyell Avenue Rochester 6, New York

FEDERAL STAMPING CO. 7318 Atoll Avenue No. Hollywood, California

▲ For more details circle NED-131 M on enclosed inquiry slip ▲

DRUM PARTS CLOSING TOOL Speeds Open Head Drum Closures



A simple, quick-acting closing tool, so efficient, so easy-to-use it will speed closure of all types of open head drums—especially the outstanding locking rings developed by Drum Parts, Inc. These include:

PLAIN LUG RINGS • OVERLAPPING RINGS WELD NUT RINGS

Complete Catalog illustrates and gives full details for closing tools, rings and accessories to fit all drum closing needs. Send for your copy today.

DRUM PARTS, INC.
10311 Meech Ave. Cleveland 5, Ohio

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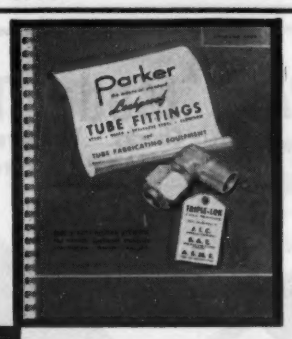


Pick the right tube fitting quicker with this 128-page Parker Data Book

All the data to design or "tube up" an industrial system is included in this 128-page Parker Tube Fittings Catalog. Guides you in proper tube selection. Gives installation hints, also descriptions and dimensions of all Parker Fittings: "Triple-lok," "Ferulok," "Intru-lok," "Weld-lok," "Braze-lok," in steel and stainless steel, copper, aluminum, brass, for any industrial system from instrument lines to high pressure hydraulic lines.

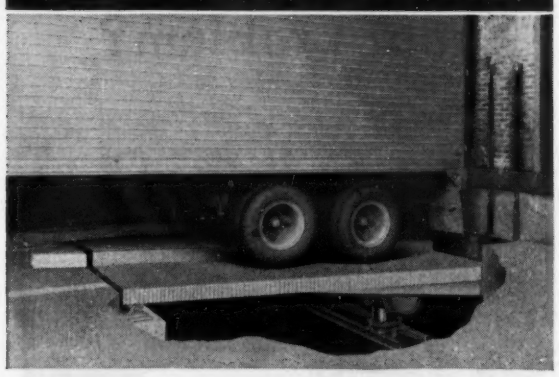
Ask your Parker distributor, listed in the Yellow Pages, for a Parker 4300 Catalog. Or write . . .

Parker FITTINGS AND HOSE DIVISION
17325 Euclid Avenue • Cleveland 12, Ohio
A DIVISION OF PARKER-HANNIFIN CORPORATION

▲ For more details circle NED-133 M on enclosed inquiry slip ▲

NEW, IMPROVED MODEL

Rotary® Truck Leveler



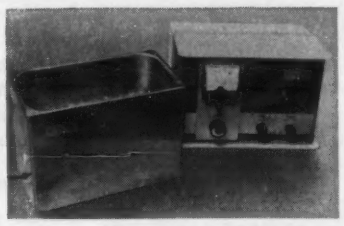
Now with 16′ platform . . . 3′ vertical travel

A longer platform and greater vertical travel equip the Rotary Truck Leveler to handle modern trailers with high beds and long rear overhang . . . as well as all other highway carriers. Using economical hydraulic power, the Rotary Truck Leveler raises or lowers truck/trailer to bring bed to dock level for fastest, safest loading and unloading. Write for Catalog RE-800.

Rotary Lift Company—Division of Dover Corporation
1179 KENTUCKY, MEMPHIS 2, TENN.

▲ For more details circle NED-134 M on enclosed inquiry slip ▲

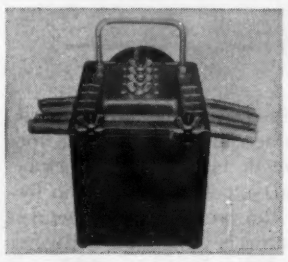
ULTRASONIC CLEANERS
uses 70-w generator, 1½-gal tank



Shop dirt, machine oil, soldering flux, metal chips, grease, and fingerprints are removed from precision parts by a line of ultrasonic cleaning systems. Typical normal duty system uses a 50-kc, 70-w Model UG-70 generator, combined with a 1½-gal Model UT-15 transducerized tank. Other 50-kc models, rated up to 650 w for heavy duty service can be used with up to 11-gal tanks. • **Ultrasonics Corp.**, 10909 Venice Blvd., Los Angeles 34, Calif.

▲ For more details circle NED-136 M on enclosed inquiry slip ▲

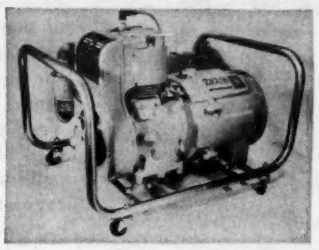
FOUR-STATION PUMP
handles four fluids or gases



Glue, inks, acids, or other liquids as well as gases are handled at rates up to 30 gph by this four-station pump. The four different fluids passing through the aluminum unit at one time are isolated from contact with pump parts, facilitating change in application. Pump affords a lift of 8 ft and operates to a 30-ft head when pumping liquids. It seals off when stopped and its motor is enclosed and explosionproof. Shaft or air motor driven models are available. • **Custom Machine Co.**, 119 Highland Parkway, Roselle, N. J.

▲ For more details circle NED-137 M on enclosed inquiry slip ▲

PORTABLE ELECTRIC GENERATOR
produces 3000-w, 115/230-v ac



Alternating - current 3000-w power is provided at job sites or in remote locations by this heavy-duty Zeus Model GW - 300 portable electric generator. Power is generated by a permanent magnet rotating field which eliminates all brushes, slip rings, or commutator. The 115/230 v 60-cycle single-phase unit is driven by a rope-started, single-cylinder, 4-cycle air-cooled gasoline engine which operates about 5 hr at full load on a fuel capacity of 2¾ gal. Accessories include an automatic electric starter, up to 500 ft capacity cord reels, and an exhaust extension. A kit adapts unit for butane or propane gas operation. • **Borg-Warner Corp.**, Pesco Products Div., 24700 N. Miles Rd., Bedford, Ohio.

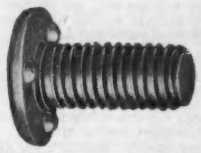
▲ For more details circle NED-138 M on enclosed inquiry slip ▲

OHIO WELD SCREWS

GW SCREWS — Used where design requires a smooth unmarred surface and a fastener permanently fixed in place.

HH SCREW — Used where a single, button-type projection is required when welding to curved surfaces, to heavy sheet 3/32" or thicker, or to ends of rods.

RW SCREWS — Used where a hermetic seal is required to prevent leakage of air, gas, water, oil or dust, or when welding to perforated metal or wires.



HW SCREWS — Used where a self-locating through bolt is required to be fixed securely in place so that it will not turn and a flush surface is required for attaching mating parts.

Thread Size 6-32 to ⅜-16
Samples and information available upon request.

The OHIO WELD FASTENERS Primary Fastener in Fastener Assemblies

THE OHIO NUT AND BOLT CO.
14 FIRST AVENUE, BEREA, OHIO

▲ For more details circle NED-139 M on enclosed inquiry slip ▲

Why IS THE NEW DILLON MODEL P SCALE SO DIFFERENT?

Because it's OFFICIALLY SEALED by the Los Angeles County Bureau of Weights and Measures prior to shipment! Absolute assurance that the unit you buy meets the acceptance tolerance of the United States Bureau of Standards for sealable scales as set forth in Section T.2.2 of Handbook 44. These same regulations are followed by all bureaus of weights and measures. Thus, if re-sealing is felt to be necessary in another state, no special problems are involved. Accuracy is within *1/10 of 1% of full range!*

8 different capacities: 0-250, 0-500, 0-750, 0-1000, 0-2500, 0-5000, 0-7500, 0-10,000 lbs. Large, 16" diameter dial. Tare loads instantly canceled out by quick-set knob. Has heavy duty ball bearing swivel hook, sealed mechanism, strong plastic crystal over dial. Shock-proof and fully dampened against vibration. Temperature compensated. Exceptionally rugged. Truly America's *finest*, automatic suspension scale – yet priced LOW to suit the average shop budget!

COSTS YOU NOTHING TO INVESTIGATE. WRITE FOR PROFUSELY ILLUSTRATED BROCHURE AND FULL COLOR PICTURE. W70

W.C. Dillon & CO., INC.
14578NE Keswick St. • Van Nuys 1, Calif.

▲ For more details circle NED-140 M on enclosed inquiry slip ▲

Need a Motoreducer with an unusual drive motor?

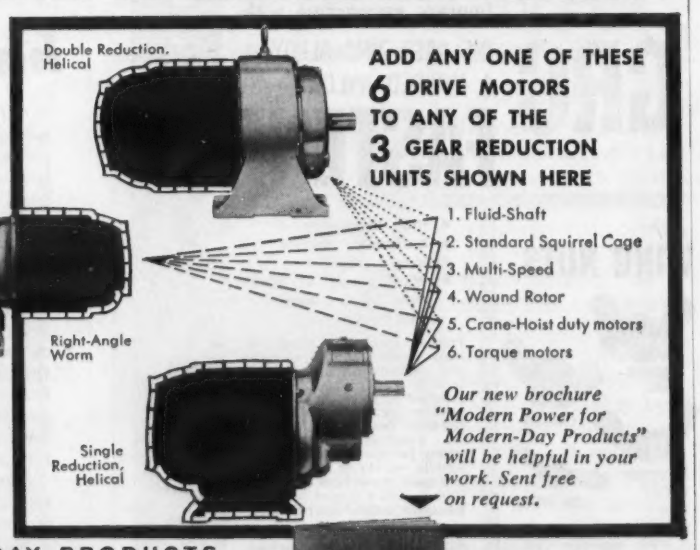
LET REULAND TAILOR A MOTOREDUCER PACKAGE TO YOUR EXACT NEEDS . . .

No longer must you "make something do"... no longer must you modify *your* machine to fit the *drive!* Hundreds of different speed and power variations can be developed from the three basic Reuland gear reduction units shown at right.

This is made possible through the use of Reuland's famous "Xpandable-Design" idea.

Whether you need a simple motor-and-reducer—or an amazing, automatic combination with a special motor, gear reducer, magnetic brake and fluid coupling—Reuland engineers can quickly solve your drive problem.

Costs are lowered. Development time is saved. Your drive is *right*. Why not see first-hand what a Reuland Motoreducer can do for you.



ADD ANY ONE OF THESE 6 DRIVE MOTORS TO ANY OF THE 3 GEAR REDUCTION UNITS SHOWN HERE

1. Fluid-Shaft
2. Standard Squirrel Cage
3. Multi-Speed
4. Wound Rotor
5. Crane-Hoist duty motors
6. Torque motors

Our new brochure "Modern Power for Modern-Day Products" will be helpful in your work. Sent free on request.

MODERN POWER FOR MODERN-DAY PRODUCTS
. . . ALL IN LIGHTWEIGHT ALUMINUM FRAMES!

REULAND MOTORS

A DEMONSTRATION UNIT FOR YOUR EQUIPMENT?

So sure are we you'll like what you see, we're offering to engineer a demonstration unit for your equipment without the slightest obligation. Just write us.

Refer to Sweet's Product Design File, Section 5a

Reuland Electric Company—Distributors in all principal cities
Western Division: Alhambra, California • Eastern Division: Howell, Michigan

▲ For more details circle NED-135 M on enclosed inquiry slip ▲

HOW MUCH IS half a furnace WORTH?

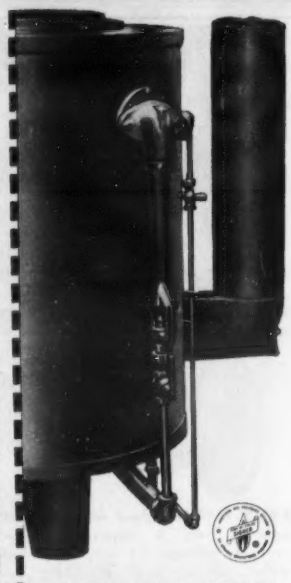
BUZZER
REG. U.S. PAT. OFFICE

INDUSTRIAL FURNACES
using only low pressure gas give you Full-Value, Fully "Packaged" Venturi Units for every metal working service.

NO BLOWER NEEDED
NO ELECTRICAL POWER
JUST CONNECT TO GAS SUPPLY

Why buy half a furnace? When you uncrate an ordinary unit, you get something like a car without the engine. You need in addition: 1. a costly blower, tools, electrical and other installation contractors, plus maintenance; 2. electrical power, wiring, transformers, surge controls; 3. shop noise suppressors and special remote locations; 4. extra safety precautions due to complex heating systems.

When you specify "BUZZER", you get the whole "packaged" furnace, all ready to connect to your gas supply, all ready to operate. "BUZZER" modern, gas-fired heat treating and melting furnaces give you the quietest, most reliable metal working units available . . . **operative during power shut-downs** . . . completely self-contained, nothing to add except the profits from increased production and savings from maintenance-free operation. Standard and special furnaces available.



COMPLETE LINE OF "BUZZER" BURNERS FOR CLEANING, RINSING, PICKLING AND OTHER HEAT APPLICATIONS

Write Today for Complete "BUZZER" Catalog No. 1570A
CHARLES A. HONES, INC.
BAldwin 3-1110 — Established 1911
157 SOUTH GRAND AVENUE, BALDWIN, L. I., N. Y.
"BUZZER" Burners & Furnaces for Heat Treating, Melting, Soldering

▲ For more details circle **NED-147 M** on enclosed inquiry slip ▲

NEW MASSIVE (but economical) MC NYLON PLATE NOW AVAILABLE!

Huge MC Nylon plate—the largest ever produced—is now available for wear plates, panels, tooling, fixtures and other applications which need nylon's unique mechanical or structural properties.

Revolutionary new processing techniques allow price reductions of 15% under nylon plate presently available. In thicknesses from 4" down to ½" and in 2' x 4' sections, MC Nylon opens brand new design possibilities and manufacturing economies in many industries.

In tubular bars, the specially formulated bearing material costs less than commercial bronze bushings of similar size—and up to 50% below other nylons.

MC Nylon tubular bars are made in O.D.'s from 2" to 15" with wall thicknesses of ⅛", ½", ¼" and 1". Rod up to 17" diameter is also available with special larger sizes and shapes made to order. Supplied in Polypenco blue.

Call or write for full information.

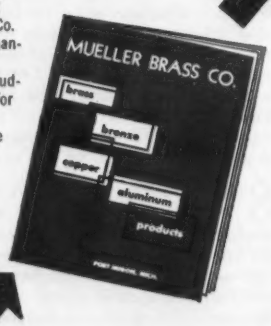
POLYPENCO industrial plastics
The Polymer Corporation of Pennsylvania
Reading, Pa.

EXPORT: Polypenco, Inc., Reading, Pa., U.S.A.

▲ For more details circle **NED-148 M** on enclosed inquiry slip ▲

THIS MANUAL GIVES YOU THE FACTS ABOUT **ONE DEPENDABLE SOURCE** FOR A WIDE VARIETY OF BRASS, BRONZE AND ALUMINUM PRODUCTS.

This manual contains technical information on Mueller Brass Co. production processes for the manufacture of brass, bronze and aluminum fabricated parts including forgings, special alloy rod for screw machine products, impact extrusions, formed tube assemblies, sintered metal parts and plastic parts as well as products for the plumbing and heating and the refrigeration and air conditioning industries. Send for your copy today.

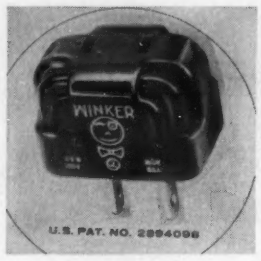


314

Please send me Mueller Brass Co. Manual No. FM 3017.
Name_____
Firm_____
Address_____
City_____ State_____

MUELLER BRASS CO.
PORT HURON 37, MICHIGAN

ELECTRIC FLASHER
makes 14 to 16 flashes per minute



Long, wide bimetallic element of the No. 471 Winker, an electric flasher for warning lights and displays, flexes easily without damage. Coil cannot overheat, and the silver contacts resist pitting. The UL-listed, CSA-approved unit is rated 15 to 100 w and plugs into any 110-125 v ac line. It makes from 14 to 16 flashes per minute. • **Eagle Electric Mfg. Co.**, 23-10 Bridge Plaza S., Long Island City 1, N. Y.

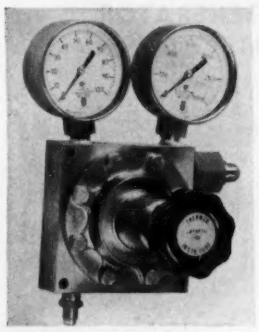
▲ For more details circle **NED-149 M** on enclosed inquiry slip ▲

BLIND & OPEN RIVETS
plugged and hollow types offered

Minimum blind side clearance, adaptability to different material thicknesses, and positive hole fill, even in oversize or out-of-round holes, are features of Commercial rivets. Suited for blind or open use, they are made in plugged (structural) and hollow (nonstructural) types for application by one man from one side of the work. Stems fracture cleanly and quickly, so trimming is unnecessary. Rivets with universal or countersunk heads are available in 1/32 to 1-in. grip lengths and ⅛, 5/32, 3/16, and ¼-in. diameters. • **Townsend Co.**, Cherry Rivet Div., Box 2157-Z, Santa Ana, Calif.

▲ For more details circle **NED-150 M** on enclosed inquiry slip ▲

PRESSURE REGULATOR
stainless unit samples low flows



Sampling errors due to contamination of industrial gases are prevented by use of this stainless steel pressure regulator which eliminates the need for bleed flows in total purity measurements. Very low flows can be sampled from compressed gas cylinders by the single-stage regulator. Moisture and trace oxygen measurements are quickly made with the unit, also suited for precise chromatography analysis. Regulator body is machined from solid stainless, has nylon valve seat, Teflon gaskets, and stainless steel diaphragm. Inlet and outlet gages have 3000 and 100-psi maximums, respectively. Flow is 0 to 10 cfh. *(Editor's Note: This item appeared in the November 1960 issue with the wrong picture).* • **Thermco Instrument Corp.**, U. S. Route 20, La Porte, Ind.

▲ For more details circle **NED-151 M** on enclosed inquiry slip ▲

25 years of progress in tiny parts

☐ Reduce costs
☐ Simplify assembly
☐ Improve appearance with

GRC DIE CAST ZINC ALLOY & MOLDED NYLON **FASTENERS**

DIE CAST ZINC ALLOY: Wing Nuts, Cap Nuts, Thumb Nuts, Thumb & Wing Screws
MOLDED NYLON: Screws, Hex Nuts, Washers, Screw Insulators

WING NUTS

Just 4 of the wide range of styles available from stock . . . including extra low, high and round wings; junior and senior series . . . in thread and blank sizes from #4 thru ⅜". Patented recessed wings, smooth-acting washer-like bosses.

- High in quality
- Uniformly accurate
- Low in cost
- Wide range of stock styles, types, sizes and threads

Produced in one high speed automatic operation, GRC's exclusive methods assure uniformity, smooth, rustproof & corrosion resistant surfaces and the lowest possible cost. New kinds of fasteners never before available . . . modifications in stock fasteners for specialized use . . . infinite variety in styles, types and sizes, have been made possible by GRC's special automatic die casting and molding machines.

Write, wire, phone RIGHT NOW for Samples, prices, your copy of GRC's NEW INDUSTRIAL FASTENER CATALOG

GRIES

GRIES REPRODUCER CORP.
World's Foremost Producer of Small Die Castings
143 Beechwood Ave., New Rochelle, N. Y. • NEw Rochelle 3-8600

▲ For more details circle **NED-152 M** on enclosed inquiry slip ▲

AMERESCO* Model T-1
Checks Temperature INSTANTLY, Accurately

SURFACES Liquids Gases
From missile surfaces to immersion in oil baths. Range is −20°C to + 180°C. Accuracy to ½% of total scale range. F° and C° available.
For production, laboratories, maintenance and field application.
Direct readings-no conversions necessary.
Made by Siemens-Halske of Germany-maker of fine precision instruments. *Trademark

AMERESCO, INC.
4 Center Avenue, Little Falls, N. J.

▲ For more details circle **NED-153 M** on enclosed inquiry slip ▲

Yard materials handling your problem?

AUTOMATIC®
has the right truck

for this job in Model GLFP pneumatic tired gas-powered lift truck. With AUTOMATIC's unique power package, this truck develops high torque in low speed for those tough outdoor operations. It's high underclearance bridges the top of steep ramps without hanging up and moves easily over uneven ground. Power steering, available as standard equipment, makes this truck exceptionally easy to steer. Pneumatic tire models available in capacities from 3,000 to 8,000 lbs.

Other cushion tire GLF models are available in capacities from 3,000 to 10,000 lbs. All models in this series offer outstanding gas economy—cutting fuel consumption up to 30%, compared to similar gas trucks doing the same jobs. AUTOMATIC's famous quality construction also means less maintenance, lower cost operation.

The GLF series brings you all these *plus* advantages, yet costs no more than other gas-powered trucks with automatic transmission. Sounds like a real value? It is—get the full story in Model GLF bulletins or AUTOMATIC's Industrial Truck Selector Guide. Write Automatic Transportation Co., Division of The Yale and Towne Manufacturing Company, 61 W. 87th Street, Dept. XO, Chicago 20, Ill.

▲ For more details circle **NED-154 M** on enclosed inquiry slip ▲

MISTKOP STOPS MIST

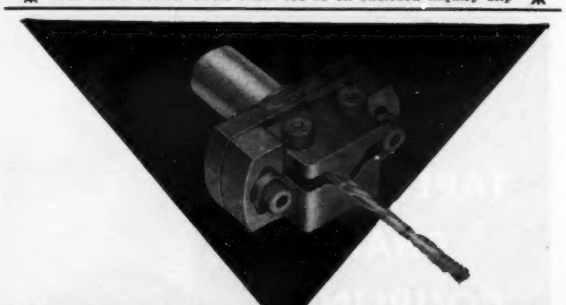
COLLECTS MIST-FOG EFFECTIVELY IN A SMALLER SPACE

This efficient Mistkop unit provides low-cost mist control for all machining operations employing coolants or lubricants. Requires no duct work or costly piping—*is actually portable!*

Mistkop is sturdy in design—has a minimum number of parts and gives long, trouble-free service. Stops clouding of lights . . . eliminates fire hazards of uncontrolled mist. Write for detailed description.

AGET Manufacturing Company
1396 Church Street • Adrian, Michigan

▲ For more details circle NED-155 M on enclosed inquiry slip ▲



CUT SET UP TIME, TOOL INVENTORIES
with Brookfield Tool Holders*

Simple Things Pay Off! The simpler they are, the better they work. What could be simpler than a precision ground V-jaw vise for a tool holder? If you had thought of it first (and we don't know why you didn't) you'd be selling them by the thousands, just as Brookfield now is.

It's so simple, it's perfect. Just slip the tool into the V-jaw, tighten, and you're off and running with perfect alignment. No time-consuming setup adjustments. No costly bushings or collets to stock or make. Brookfields hold drills, reamers or cutters of any size within the range of any model. A new, colorful, information-packed brochure tells the whole story. It's yours free for the asking!

Write, wire, phone *Patent No. 2472040

BROOKFIELD, INCORPORATED
STOUGHTON 114, MASSACHUSETTS

West Coast Stocking Distributor: Jones Industrial Sales, 910 Geneva St., Glendale 7, Cal., Phone Citrus 1-2306

▲ For more details circle NED-156 M on enclosed inquiry slip ▲

DELAVAN

SPRAY NOZZLES for industrial use

You'll find the nozzle that's right for your specific requirements in the complete selection offered by Delavan.

Manufacturers all over the world rely on Delavan for high quality, precision industrial nozzles.

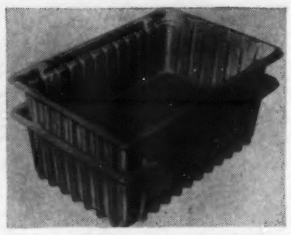
Whatever your nozzle requirements, specify Delavan.

Write for Catalog 33 for complete details and technical specifications.

DELAVAN Manufacturing Company
WEST DES MOINES • IOWA

▲ For more details circle NED-157 M on enclosed inquiry slip ▲

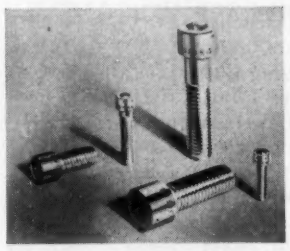
COMPARTMENTED TOTE BOXES made of high-density polyethylene



Adaptable to a wide range of parts and materials handling operations, standard and compartmentalized plastic tote boxes have a combined stacking-nesting feature. They are vacuum formed of high-density linear polyethylene in a wide range of standard stocked sizes, and special sizes up to 70 x 40 x 24 in. on order without tooling charges. They are unaffected by any known solvent or chemical, and withstand temperatures ranging from −40 to 250° F. A free miniature Compart-A-Box will be sent on request. • **Stauffer Laboratories, Inc.**, Plastics Div., 1919 Vineburn Ave., Los Angeles 32, Calif.

▲ For more details circle NED-158 M on enclosed inquiry slip ▲

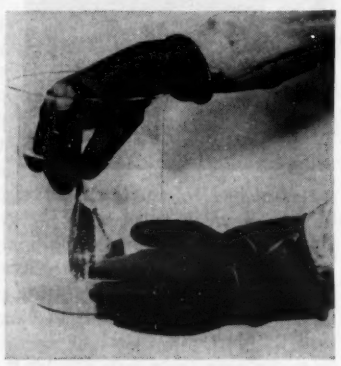
HIGH STRENGTH CAP SCREWS have fatigue limit of 40,000 psi



Basically socket head cap screws in configuration and dimensions, Unbrako K Series screws have roughly twice the fatigue strength (40,000 psi) of their standard industrial counterparts. Applications include aircraft accessories, critical pumps and turbines, high-speed machine tools, and high-impact machinery. Strength is achieved by rolling the threads and cold-working the head-to-shank fillet after heat treatment. Units are heat treated to 160,000 psi stress level. Strength is retained at up to 550° F. The cadmium-plated fasteners are made in screw diameters from No. 8 through ½ in., fine or coarse threads. • **Standard Pressed Steel Co.**, Box 581, Jenkintown, Pa.

▲ For more details circle NED-159 M on enclosed inquiry slip ▲

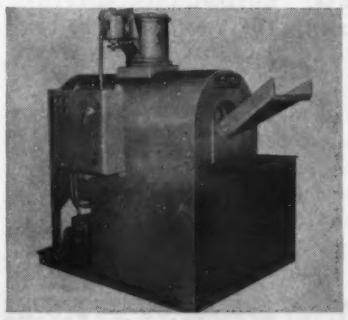
NEOPRENE GLOVES sizes 10 and 11 added to line



Stanzoil N-31 and N-35 industrial gloves, made of DuPont neoprene to withstand oils, greases, solvents, acids, and caustics, are now available in added Sizes 10 and 11. Nonslip finish on palm and finger areas enables wearer to grip wet, slippery objects securely. Gloves afford sufficient finger dexterity for parts handling, photography, light assembly, and laundry work. Cuff length is 10½ in. • **Pioneer Rubber Co.**, 296 Tiffin Rd., Willard, Ohio.

▲ For more details circle NED-160 M on enclosed inquiry slip ▲

DRUM TYPE PARTS CLEANER processes 6 to 9 cu ft per hour



Low-cost volume cleaning of small parts at rates from 6 to 9 cu ft per hour is performed with this compact drum type cleaning machine. It will handle stampings, castings, and machined parts, and loading can be manual or by conveyor discharge into the loading hopper. Parts are conveyed through the machine by a worm inside the drum, and they pass through soak, spray, and drain sections before being discharged automatically. Time in various sections is controlled by a variable speed drive. Equipment includes solution pump and motor, ventilating blower, solution temperature controls, and a solution tank with access door to filtering screens. The solution tank can be steam, gas or electric heated. • **Cincinnati Cleaning & Finishing Machinery Co.**, 2029 Hageman St., Cincinnati 41, Ohio.

▲ For more details circle NED-161 M on enclosed inquiry slip ▲

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

For Complete Information Phone BAker 5-8201 or write:

PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER, NEW YORK

▲ For more details circle NED-162 M on enclosed inquiry slip ▲

BECKER

HAS IT . . . OR CAN MAKE IT—
if it's CARBON or GRAPHITE!

A dependable source for everything in Carbon and Graphite

Graphite Cores and Chills—Graphite Powder and Particles of any mesh . . . complete Graphite Fabrication Facilities.

BRUSHES . . . for all motor and generator applications . . . carbon, graphite, copper leaf, gauze and metal-graphite.

WELDING ELECTRODES, WELDER BRUSHES . . . Keen-Cut Electrodes for carbon arc-air jet cutting . . . Keen-Arc Carbons, cored and heavily copper coated, for twin-arc torches . . . paste, rods and plates.

EXTRUSIONS, MOLDED SHAPES OR SPECIAL CARBONS designed and produced to your specifications.

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COMPLETE BECKER ENGINEERING SERVICE is always available and entails no obligation whatever

BECKER BROTHERS CARBON CO.
3454 South Laramie Ave. • Cicero 50, Illinois
Telephone: BI 2-1260 • Chicago

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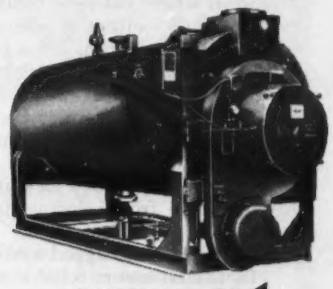
$ savers!



Continental 2-PASS

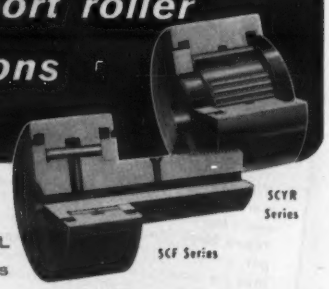
AUTOMATIC BOILERS

• Cost less to buy, operate and maintain • Guaranteed 80% minimum efficiency with oil or gas firing • Longer life with balanced internal circulation and uniform heating of boiler surfaces • Time-saving fireside accessibility with hinged front door, davited rear door • No costly complex refractory at front or rear • Guaranteed low stack temperature • From 20 up to 50% *efficient* reserve capacity obtainable on "F" Models • Front or rear tube removal • Completely factory-assembled and fire-tested • Fast steaming • Space-saving compactness • Completely automatic operating and safety controls • Quiet operation • Sizes 15-600 hp., 15-250 psi., steam or hot water for process or heating service • Now available on Lease or Time-Payment Plan • Nationwide sales and service • Ask for Bulletin BE-400.

CONTINENTAL BOILER DIVISION
Boiler Engineering & Supply Co., Inc.
Phoenixville, Pennsylvania

▲ For more details circle NED-164 M on enclosed inquiry slip ▲

Protected performance in cam follower, guide and support roller applications



Sealed and pre-lubricated McGILL CAMROL® bearings

Protect your roller follower applications for longer life with sealed CAMROL bearings. McGill packs high load capacity, precision accuracy, and positive seals into standard bearings. Avoid building up special units. The SCF series is complete with integral stud. In the SCYR series an inner race provides for shaft mounting. Black ferrous oxide finish adds corrosion resistance. Roller diameters range from ¾" to 4".

Write for helpful Bearing Handbook No. H-54-B

engineered electrical products — McGILL® — precision needle roller bearings

McGILL MFG. CO., Bearing Div., 101 N. LAFAYETTE ST., VALPARAISO, IND.

▲ For more details circle NED-165 M on enclosed inquiry slip ▲

Quick automatic stopping

...saves production time

...cuts production cost

A-B QUALITY

Bulletin 808 Zero Speed Switch

This Bulletin 808 zero speed plugging switch—another Allen-Bradley "quality" item—brings motors to a quick stop automatically—it eliminates coasting. Thus, the work cycle is shortened—and production output is increased.

The Bulletin 808 zero speed switch is ideal where machine tools must be stopped suddenly—either to prevent work spoilage, and/or accidental damage to the machine. With motors that must be reversed, it can be used to prevent "plugging"—the reversing power cannot be applied until the motor has come to a complete stop.

The Bulletin 808 zero speed switch can be furnished with a lockout relay to prevent contacts from closing unless the motor starting switch is "on." As with all A-B controls, this rugged switch has silver contacts that assure reliable performance without maintenance. You ought to know more about this useful switch! Please send for details, today.

Available in three types of mountings

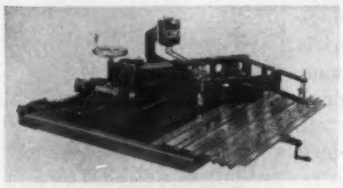
Three Point Flange Mounting — Base Mounted — Four Point Flange Mounting

Allen-Bradley Co., 1334 S. Second St., Milwaukee 4, Wis.
In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

ALLEN-BRADLEY
Member of NEMA
Quality MOTOR CONTROL

▲ For more details circle NED-166 M on enclosed inquiry slip ▲

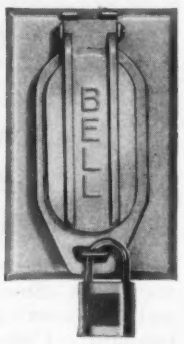
ENGRAVING MACHINE takes sizes of 19 in. by any length



Pantograph of the Model IRX bench type engraving machine is adjustable from 2:1 to 8:1 ratios for making extra large plates or oversized electronic panels. Its cutter spindle will cover an area of 19⅛ x 6 in. in one setting, and the machine base accepts sizes of 19 in. by any length. The ball bearing spindle takes a ¼-in. diameter cutting tool. Pantograph assembly, motor, and copy table are an independent unit, removable from the base for placement on an oversized panel for on-the-spot engraving. An automatic depth regulator compensates for irregular surfaces which vary in thickness. • **New Hermes Engraving Machine Corp.**, 154 W. 14th St., New York 11, N. Y.

▲ For more details circle NED-167 M on enclosed inquiry slip ▲

RECEPTACLE COVER PLATE is weather and tamperproof



Outdoor receptacles and switches are protected from moisture, rain, and snow, as well as pilfering and accidental shock by the Saf-T-Lok snap-cover. Built-in hasp permits use of padlock. The long, deep snap-cover accommodates two large plug caps side by side, in any of 14 different 1, 2, and 3-gang combinations. Plates are 0.040-in. solid brass; covers, diecast aluminum. Both are finished in baked aluminum enamel. • **Bell Electric Co.**, 5735 S. Claremont Ave., Chicago 36, Ill.

▲ For more details circle NED-168 M on enclosed inquiry slip ▲

AIRLESS PAINT SPRAYING applies finish with or without heat

Large and/or heavy products which cannot be moved to a paint spray booth are finished on the job with this airless spray painting unit. Equipment permits cold atomization and is suited for application of noncritical finishes to small or large parts. Paint must be either clear or with a finely ground pigment of 1½ mils or smaller. Air supply required is 7 cfm at 80 to 100 psi. Spray units are available with or without heat in direct and recirculating portable and stationary types. • **Eclipse Air Brush Co.**, 390 Park Ave., Newark 7, N. J.

▲ For more details circle NED-169 M on enclosed inquiry slip ▲

LOW COST HAND PUMPS

for safe, fast dispensing of INDUSTRIAL LIQUIDS

20 g.p.m. TRANSFER LUBE AND CUTTING OILS, SOLVENTS, FUELS AND PROCESS LIQUIDS WITHOUT WASTE

Double-action, 20 g.p.m., corrosion-resistant pump available in models for most plant needs. Complete catalog and prices available by return mail. Quick delivery from many warehousing points.

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ROTARY TYPE AVAILABLE IN MODELS USED AS
- BARREL PUMP
- HOSE REFUELER
- SKID TANK PUMP
- PIPESTAND UNIT
- PIPELINE MOUNT

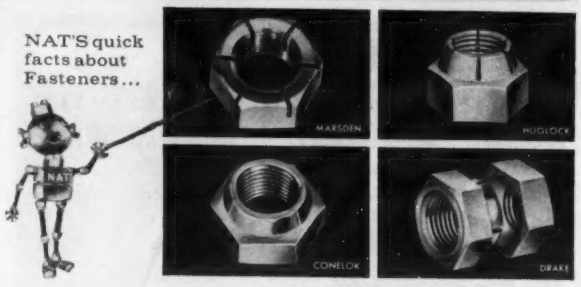
10 g.p.m.

BOWSER, INC. FORT WAYNE INDIANA

1381 E. CREIGHTON • FORT WAYNE, IND.

▲ For more details circle NED-170 M on enclosed inquiry slip ▲

NAT'S quick facts about Fasteners...



Looking for the right lock nut? Put these four high on your check list

MARSDEN for minimum cost, average conditions. Free-running until seated. One-piece, re-usable.

HUGLOCK for adverse conditions. Locks without seating. One-piece, re-usable.

CONELOK for high fatigue life. Closed stress paths. Locks without seating. One-piece, fully re-usable.

DRAKE for severe stress, shock and vibration. Free-running until seated, or can be locked at any point. Two-piece, fully re-usable.

Write for literature and keep it handy for future reference.

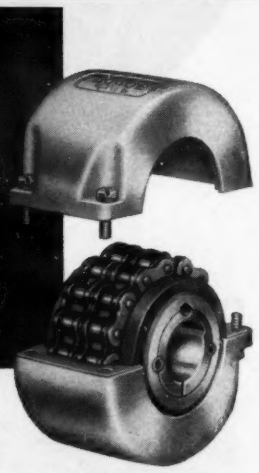
The National Screw & Mfg. Company

National Products — Cleveland 4, Ohio — Los Angeles 22, Calif.

▲ For more details circle NED-171 M on enclosed inquiry slip ▲

NOW!

TAPER-LOCK CHAIN COUPLINGS



Off the shelf... No reboring

New Dodge Chain Couplings (with new line of aluminum covers, too!) provide strong, positive, compact coupling of shafts, with accomodation for usual slight misalignment. Like Dodge Flexible and Rigid Couplings, the new Chain Couplings employ the famous Taper-Lock Bushings, available in desired sizes from distributors' stocks—no reboring required. For detailed information write now for Bulletin A644.

Dodge Manufacturing Corporation, 2100 Union St., Mishawaka, Indiana

DODGE of Mishawaka, Ind.

▲ For more details circle NED-172 M on enclosed inquiry slip ▲

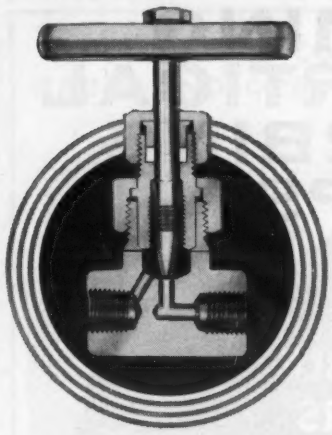
Send for Your FREE COPY

Money saving ideas on Fabricated Wire Cloth Parts. Large or small wire cloth inserts or covers in all metals and meshes to your specifications. Engineering assistance on design problems, especially on assembly details.

NEWARK WIRE CLOTH COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

▲ For more details circle NED-173 M on enclosed inquiry slip ▲



SOLVE YOUR METER MANIFOLD AND CORROSIVE FIELD SERVICE PROBLEMS

AMERICAN® NEEDLE VALVES

Teflon-packed forged steel American Needle Valves eliminate gland leaks, deliver dependable service under the toughest conditions. Stainless or carbon steel precision machined valve bodies are ideally suited for welding. Stainless steel centerless-ground valve stem design makes it simple to repack valves under pressure.

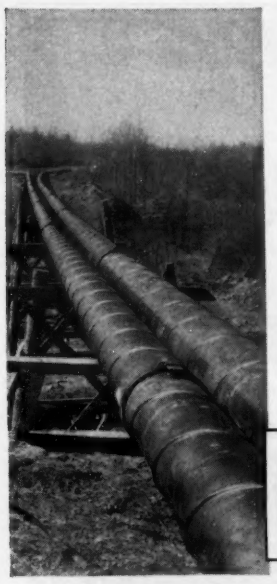
Standard valves design rated for pressures to 5,000 psi at 70°F. Upon request, assembled valves are hydrostatically tested to 10,000 psi (twice rated working pressure) and are individually inspected. Valves also furnished with graphite-impregnated asbestos packing for temperatures above 450°F.

Angle or straight patterns—screwed or union bonnets.

Your American Meter representative will give you full details.

AMERICAN® METER COMPANY
(INCORPORATED ESTABLISHED 1836)
General Offices: Philadelphia 16, Pa.
Sales Offices in Principal Cities

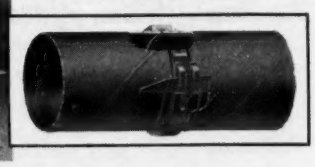
▲ For more details circle NED-174 M on enclosed inquiry slip ▲



NAYLOR...
The Economical Steel Pipe

Pipe sizes from 4" to 30" in diameter in a wide range of wall thickness. NAYLOR Spiralweld steel pipe . . . easy to handle and install with built-in strength and safety. Suitable for most industrial applications.

For connecting NAYLOR pipe, all types of flanges and mechanical couplings are available in addition to the NAYLOR Wedgelock coupling illustrated. This positive coupling anchors securely to pipe ends. A hammer is the only tool required to connect or disconnect it.



Write for Bulletin No. 59 for data on pipe, fittings and connections.

NAYLOR PIPE Company

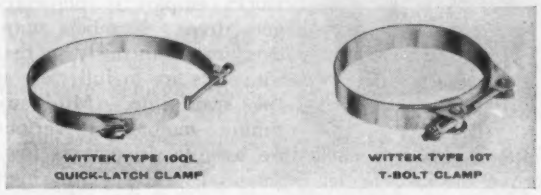
1247 E. 92nd St., Chicago 19, Illinois

Eastern U.S. and Foreign Sales Office:
60 East 42nd Street, New York 17, N. Y.

▲ For more details circle NED-175 M on enclosed inquiry slip ▲

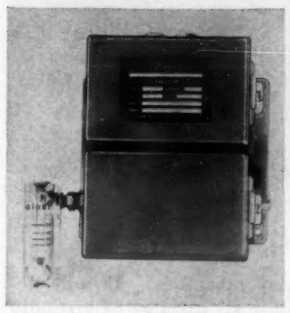
FLAT BAND CLAMPS
two types made of stainless steel

Uniform peripheral clamping action is assured with Type 10QL and 10T flat band clamps, offered in diameters from 2¼ to 10 in. They are made of high tensile strength stainless steel with a standard A or AN self-locking nut and a spot welded trunnion retainer. The Type 10QL Quick-Latch clamp is for hose and duct connections where easy installation and fast removal are important. Type 10T without the Quick-Latch feature is for more permanent uses. • Wittek Mfg. Co., 4305 W. 24th Place, Chicago 23, Ill.



▲ For more details circle NED-177 M on enclosed inquiry slip ▲

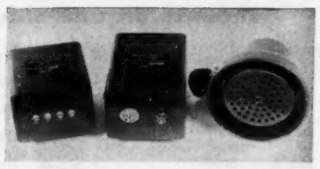
DEW POINT TRANSDUCER
measures gas generator outlet



Dew points in −20 to 60° F temperature range are continuously measured by Type 7600 dew point transducer. It is usable for outlet measurement of endothermic gas generators used in controlled atmosphere heat treating. Indicating, recording, controlling, or alarm read-outs are possible using the unit's millivolt output. Platinum resistance thermometer elements are interchangeable, and a Zener reference diode provides close voltage regulation. • Alnor Instrument Co., 420 N. LaSalle St., Chicago 10, Ill.

▲ For more details circle NED-178 M on enclosed inquiry slip ▲

RADIATION ALARM
static type operates siren, signal



Designed to monitor the output of a photo multiplier tube, this static radiation alarm system is comprised of two parts—an amplifier and a transistorized power supply. When the tube output exceeds a limit preadjusted on the amplifier, the system is switched on and the amplifier supplies power directly to a 1/6-hp siren or other signal without the use of relays. The amplifier requires 115 v, 60 cycles ac for excitation and will switch to the "on" condition with a minimum input signal of 15 microamps dc. • Lumen, Inc., Moen Avenue, Joliet, Ill.

▲ For more details circle NED-179 M on enclosed inquiry slip ▲

GOODYEAR

4 Times the Life!

New Neothane Solid Industrial Tires by Goodyear outlast other tires up to 4 times—even when lugging 2 to 4 times the load normally carried on regular rubber tires. Here's why:

1. Neothane—Goodyear's polyurethane synthetic—wears like steel, rolls like rubber.
2. Rolls over metal chips, splinters, broken glass—with minimum cutting, gouging.
3. Won't swell or turn spongy after wading through water, grease, oil, solvents or acids.

Plus outstanding performance on heaviest loads to take rough going without damaging floors. See your Goodyear dealer for facts on new Neothane Industrial Tires or write Goodyear, Industrial Tire Sales, Akron 16, Ohio.

Lots of good things come from

GOODYEAR

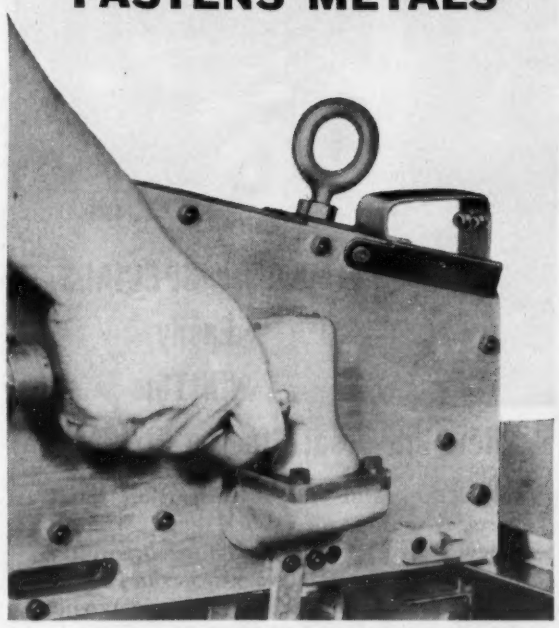
More tons are hauled on Goodyear truck tires than on any other kind

Neothane—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

▲ For more details circle NED-180 M on enclosed inquiry slip ▲

NEW!

PORTABLE STAPLER FASTENS METALS



BOSTITCH P10 AIR-DRIVEN STAPLING PLIER

This powerful, portable air-driven stapler goes where the work is. It fastens hard-to-penetrate materials on an assembly line basis.

There's no pre-drilling or other preparation. The operator simply positions the P10 on the work, and presses the thumb-tip trigger on the handle. It's possible to drive as many as 50 high-tensile staples a minute on some jobs. No special operator training is required.

The P10 fastens a maximum total combined thickness of approximately .080" steel, depending on hardness. Fastens other materials up to ¼" thickness, depending on their nature. Fastens non-brittle materials like-to-like or in combination securely and permanently at surprisingly low cost.

FREE INFORMATION. NO OBLIGATION. Let us send you full technical data on the Bostitch P10-AD. Simply circle our number on the reader service card in this publication. For immediate answers to specific questions on your application, look up "Bostitch" in your phone book or write to us direct at 692 Briggs Drive, East Greenwich, Rhode Island.

Fasten it better and faster with

BOSTITCH®
STAPLERS AND STAPLES

▲ For more details circle NED-181 M on enclosed inquiry slip ▲

Save space you can't afford to waste

YALE WAREHOUSERS

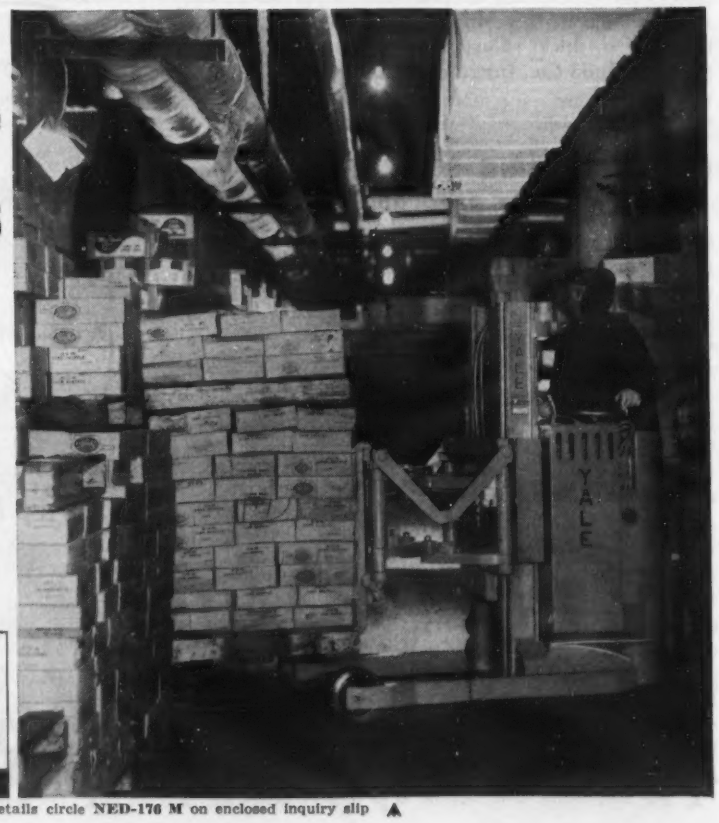
• Get more pallet rows in the same space • Can work in a 6 ft. aisle • Stack to 20 feet and more • Save on low maintenance • Reduce power costs with 2000, 3000, 4000 lb. capacity.

24 volt power. Handles various widths of loads, because different size pallets and skid bins can be handled without nesting between outriggers. Exclusive separate power unit for fork extension. Extend-retract device designed for low overall height. Forks can be extended, retracted or tilted at any height of lift. Loads stay stable.

START SAVING NOW. Yale has a finance plan that will put this truck to work for you immediately. For more information, contact your Yale Representative, or write to: Yale & Towne Manufacturing Company, Materials Handling Division, Philadelphia 15, Pa. Dept. R-005B.

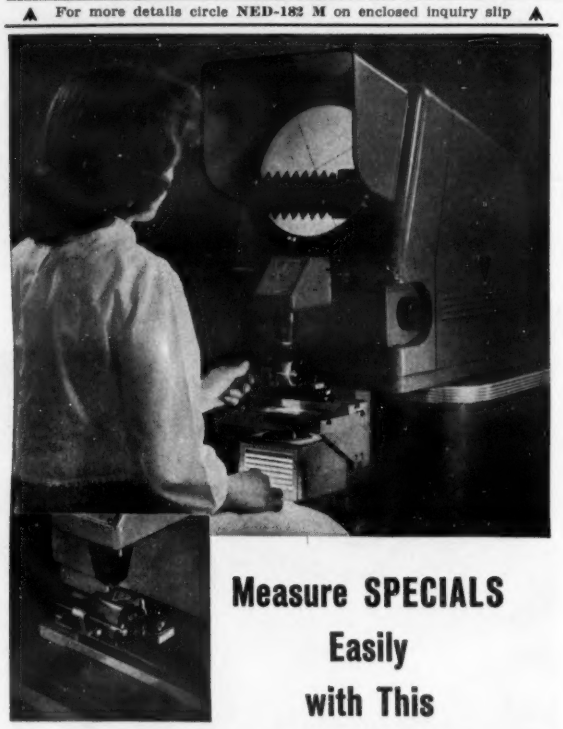
Yale Materials Handling Division, a division of the Yale & Towne Manufacturing Company. Manufacturing Plants: Philadelphia, Pa. Forest City, Ark. Products: Gasoline, Electric, Diesel, and LP-Gas Industrial Lift Trucks • Worksavers • Warehousers • Hand Trucks • Industrial Tractor Shovels • Hand, Air, and Electrical Hoists.

YALE®
INDUSTRIAL LIFT TRUCKS
TRACTOR SHOVELS • HOISTS
YALE & TOWNE



▲ For more details circle NED-176 M on enclosed inquiry slip ▲

▲ For more details circle NED-182 M on enclosed inquiry slip ▲



Measure SPECIALS Easily with This New Universal Staging Fixture

Cut set-up problems in measuring small parts, cylindrical pieces, odd shapes. There's a new Universal Staging Fixture to position just about *any* part up to 3 inches in length. Mount the part and see the sharp image on the distortion-free 10-inch screen. Get micrometer readings to .001". So easy unskilled help can learn it in less than half a day. Other big savings, too . . . extremely low purchase price, *plus* almost unlimited versatility. With your choice of understage and surface illumination, and the new Universal Staging Fixtures, you can just about write off special jigs and fixtures as a cost factor.

Find out more about how B&L can simplify your precision inspection. There's a complete line of instruments to help you. Mail the coupon now.

BAUSCH & LOMB

BAUSCH & LOMB INCORPORATED
72712 Bausch St., Rochester 2, N. Y.

Please send literature on:
- ☐ Bench Comparator, D-297
- ☐ Universal Staging Fixture, D-2007
- ☐ Toolmakers' Microscope
- ☐ StereoZoom Microscopes, D-15
- ☐ Scratch Depth Gage, D-2004
- ☐ Optical Aids, D-1059

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

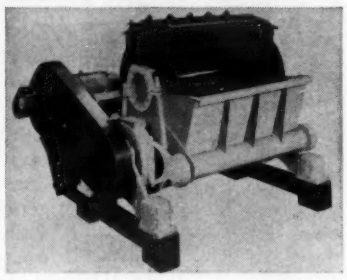
▲ For more details circle NED-183 M on enclosed inquiry slip ▲

NUMERICAL CLOCKS in 12 and 24-hr types

Precision built for heavy duty, split-second timing, PlanetGear 12 and 24-hr clocks employ a planetary gear drive. Numbers snap-over instantaneously so that numerals are in full view at the read line. Miniature timing motors in various voltages and frequencies are used to drive these low-torque clocks. Preset is manual. The 3/8-in. high numerals are hot stamped white-on-black for the hour and minute nylon drums and either black or red on white for the graduations and numerals on the seconds wheel. The panel mount case and dustproof cover are anodized aluminum, and the flush mount window is clear Plexiglas. • **Haydon Instrument Co.**, 165 W. Liberty St., Waterbury 20, Conn.

▲ For more details circle NED-184 M on enclosed inquiry slip ▲

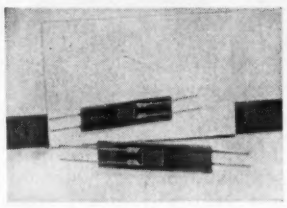
VIBRATING FINISHER for deburring, descaling, burnishing



Employing a vibrating mechanism having a positive eccentric with an adjustable stroke, Selectro Vibro Finishers are reported to reduce the finishing cycle to one-tenth of the tumbling time on twice as many parts as compared to conventional machines. It will deburr, descale, burnish, or color all surfaces of virtually any size or shape of part. Rubbing action minimizes distortion, nicking, and scratching. Drums are easily interchanged, and they are available in many sizes including compartmented types for different materials requiring different finishing media. • **Productive Equipment Corp.**, 2926 W. Lake St., Chicago 12, Ill.

▲ For more details circle NED-185 M on enclosed inquiry slip ▲

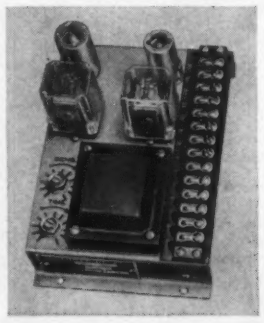
BENDING STRAIN GAGE mounts on one side of structure



Need for mounting strain gages back-to-back both inside and outside of a structure is eliminated by this Flexagage strain gage. It is mounted with any solvent-free strain gage adhesive on one side of a structure only. Flexagages can do all the jobs of back-to-back mounted types and will separate and identify bending strains from membrane, hoop, direct, and tensile strains. They make it unnecessary to mount strain gages in inaccessible locations, hostile fluids, and areas under pressure. Maximum error without correction factors for gages used as specified is 2 per cent. Gages are available in three models for materials from 0.040 to 0.320 in. thick. Custom configurations can be supplied. • **Budd Co.**, Instruments Div., Box 245, Phoenixville, Pa.

▲ For more details circle NED-186 M on enclosed inquiry slip ▲

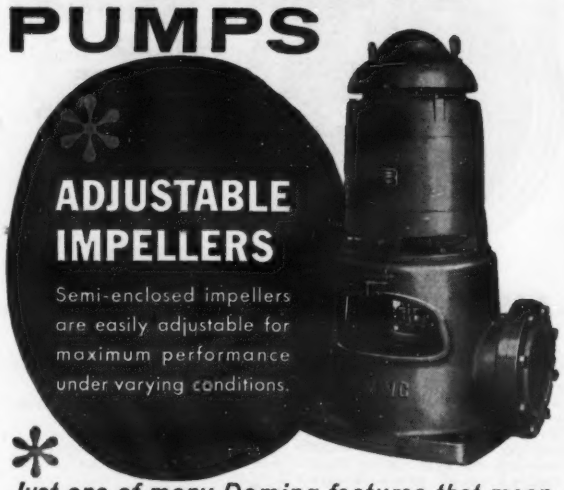
PHOTOELECTRIC SCANNER for multiple programming sequences



Monitoring the flow of slow moving parts on a conveyor, timed energizing of a reject gate for photoelectric parts inspection, and providing a signal for counting while simultaneously scanning for jam-ups are applications for the Type PE7 photoelectric scanner system. It combines a photoelectric scanner relay and an adjustable electronic timer on the same chassis. Sensitivity ranges are from 2 in. to 18 ft with adjustable time delay ranges from 1.5 to 30 sec. Scanning is by direct or reflected light. Two separate single-pole double-throw relays have pull-in, hold-in, and drop-out characteristics determined by means of connection. It operates on 100 to 130-v ac. Relay contact ratings are 8 amp noninductive at 125 v ac. • **Farmer Electric Products Co.**, 2300 Washington St., Newton Lower Falls, Mass.

▲ For more details circle NED-187 M on enclosed inquiry slip ▲

DEMING VERTICAL TURBINE PUMPS



Just one of many Deming features that mean longer life and lower operating costs

The DEMING Co.
1206 BROADWAY • SALEM, OHIO

▲ For more details circle NED-188 M on enclosed inquiry slip ▲

▲ For more details circle NED-189 M on enclosed inquiry slip ▲

Witt Roller Cans

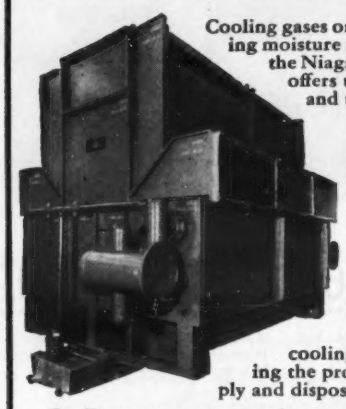
Standard straight side, deep roll corrugated Witt cans with caster supports riveted to the solid beaded bottom bands and 2" ball bearing casters (iron or neoprene). Designed for easy moving of waste, small parts or other material in loads up to 300 lbs. Available with plain body for dry food storage.

WITT Cans

THE WITT CORNICE COMPANY
4454 Steel Place, Cincinnati 9, Ohio

▲ For more details circle NED-190 M on enclosed inquiry slip ▲

ECONOMICAL COOLING OF GASES AND COMPRESSED AIR



Cooling gases or cooling and removing moisture from compressed air, the Niagara *Aero* After Cooler offers the most economical and trustworthy method. Cooling by evaporation in a closed system, it brings the gas or compressed air to a point close to the ambient temperature, effectively preventing further condensation of moisture in the air lines. It is a self-contained system, independent of any large cooling water supply, solving the problems of water supply and disposal.

Cooling-water savings and power-cost savings in operation return your equipment costs in less than two years. New sectional design reduces the first cost, saves you much money in freight, installation labor and upkeep.

Niagara *Aero* After Cooler systems have proven most successful in large plant power and process installations and in air and gas liquefaction applications.

Write for Descriptive Bulletin 130.

NIAGARA BLOWER COMPANY

Dept. ED-12 405 Lexington Ave., NEW YORK 17, N. Y.

District Engineers in Principal Cities of U. S. and Canada

▲ For more details circle **NED-191 M** on enclosed inquiry slip ▲

Handle TOOLS & MATERIALS Easily with a LIFT A LOAD

Elevating Table Top Truck

Adjustable from 24" to 42" above floor with high and low speeds for light and heavy loads up to 2000 lbs. Self locking screws prevent table backing off or dropping under load. Large hard rubber roller bearing wheels make moving easy. Improved floor lock holds truck stationary. Extra heavy four post design prevents off-center loads from tipping. Table 25" x 37", weight 270 lbs. Roller conveyor and angle set tops available, extra.

For complete details and low price write for Bulletin F-217 TODAY.

DAYTON ROGERS
Manufacturing Company

MINNEAPOLIS 7E, MINNESOTA

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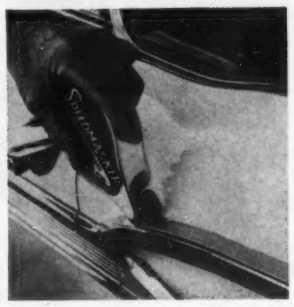
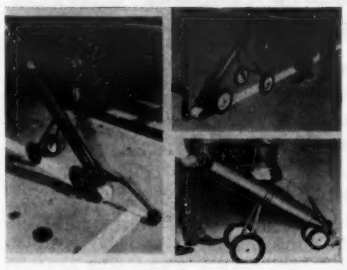
MASKING TAPE APPLICATOR speeds up application on curves



Straight, long pulls of masking tape are possible with the Speedmasker tape applicator which applies, smoothes, and seals tape. It consists of an aluminum housing from which the tape is fed to a concave rubber roller. A floating disc guides the tape edge into grooves of trim ornamentation, or rubber or metal molding. Tool has ½ or ¾-in. wide rollers. • **Rose Mfg. Co.**, 1102 W. Grant Rd., Tucson, Ariz.

▲ For more details circle **NED-194 M** on enclosed inquiry slip ▲

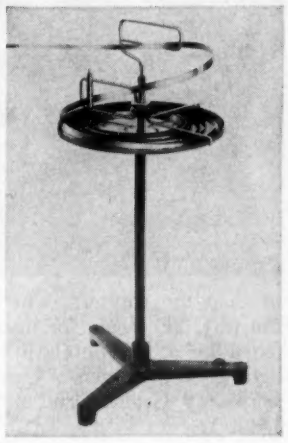
FLOOR LINE MARKER will roll lines up pillars, walls



Compact, gravity-feed Flor-Line paint marker applies traffic and safety lines on roads, parking areas, and factory and warehouse floors. It has fold-back or retractable guide wheel which allows lines to be rolled right up pillars and walls, or within ½ in. of a barrier. With optional side wheels, parallel lines can be made as close as ⅜ in. to side walls, machines, or stock. Paint is fed from built-in tank through self-cleaning multiple brass valves onto the marking roller. Flow is controlled by handle trigger, allowing continuous or broken lines to be rolled. Lines can be made in 2, 3, and 4-in. widths. • **Consolidated Paint & Varnish Corp.**, East Ohio Bldg., Cleveland 14, Ohio.

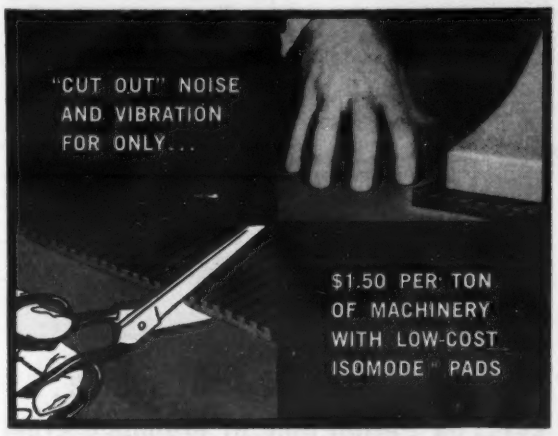
▲ For more details circle **NED-195 M** on enclosed inquiry slip ▲

STOCK REEL is automatic



Ball-bearing platen of this 16-in. diameter horizontal stock reel is powered by the natural spring action of the uncoiling stock. It is designed for small coils of narrow, thin metal in making jewelry, electronic parts, and small stampings. Unit is light in weight, yet built to sustain 16-in. coils of material up to 3 in. wide. • **Jaco Devices, Inc.**, 102 High St., Hingham, Mass.

▲ For more details circle **NED-196 M** on enclosed inquiry slip ▲



Just one package of Isomode Pads and a large pair of scissors give you effective isolation of troublesome shock and vibration on 80 tons of equipment.

That comes out to a low $1.50 per ton of equipment. And installation is just as economical. Simply cut sections to fit machine feet and install underneath. No waste, no fuss—minimum down time.

Isomode Pads are made from oil and water-resistant Du Pont Neoprene. Try one—prove to yourself how economically vibration isolation can be achieved.

Send today for special one pad trial offer at discount price. Ask for Bulletin 418-2.

MB ELECTRONICS

A DIVISION OF TEXTRON ELECTRONICS, INC.

1066 State Street, New Haven 11, Conn.

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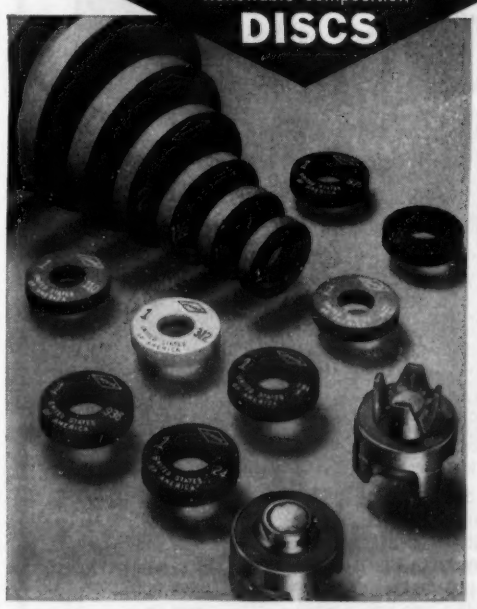
PROTECT YOUR VALVE INVESTMENT

Specify and be sure you get **JENKINS** Renewable Composition **DISCS**



MADE BY THE ORIGINATORS OF RENEWABLE DISC VALVES

Jenkins Bros. has remained the leader in composition disc development and production since 1864, when the first renewable disc valve was introduced.

THE ONLY MANUFACTURER OF BOTH VALVES AND DISCS

Jenkins Bros. devotes continuous laboratory and field research to disc improvement through use of new compounds, and new production techniques.

WRITE FOR NEW GUIDE FOR DISC SELECTION

Describes all Jenkins Discs, and their applications for steam, hot and cold water, air, gas, oil, gasoline . . . including the new TEFLON® DISC for lasting, dependable control of oxygen and other gases, solvents, acids, alkalies, and other chemicals,—and for liquid food and similar services.

Ask your Jenkins Valve Distributor for Disc Folder Form 203, or write: Jenkins Bros., 100 Park Ave., New York 17.

FOR HIGHEST EFFICIENCY USE JENKINS DISCS IN

JENKINS VALVES

LOOK FOR THE JENKINS DIAMOND TRADE JENKINS MARK ®

Jenkins Bros

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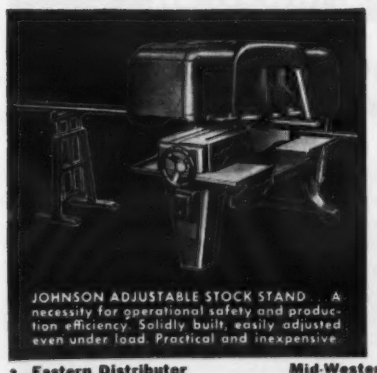
JOHNSON MODEL J . . . A big, rugged saw that cuts anything—anywhere! 10" rounds, 18" flats, heavy structurals and odd shapes. Available in wet or dry cutting models, variable speed drive and optional equipment.

JOHNSON MODEL B . . . Also available in wet or dry, metal cutting models, variable speed drive. Will easily handle 5" rounds, 10" flats, odd and irregular shapes.



JOHNSON ADJUSTABLE STOCK STAND . . . A necessity for operational safety and production efficiency. Solidly built, easily adjusted even under load. Practical and inexpensive.

JOHNSON "MOBILE" MODEL M . . . Same husky capacity as Model B, but wheel-mounted for fast, easy maneuverability indoors or out. Has self-contained handle, power line, tool box and accessories.

Only Johnson offers *all* of the outstanding construction features and performance advantages—*at a lower initial price.*

Why pay more when you can have the best for less? Compare Johnson saws with others costing hundreds more, and you'll find that *only* Johnson delivers the life-long, maintenance-free efficiency you've always wanted.

Immediately available in five high capacity models to meet any metal cutting requirement—efficiently and economically.

Write Today... for your copy of the big, new Johnson catalog. Illustrates and describes all models and accessories.

Johnson
METAL CUTTING BAND SAWS
Albion, Michigan

- **Eastern Distributor**
  R. J. R. Kelly Co.
  Hale Bldg., 51 Main St.
  East Orange, N. J.
- **Mid-Western Distributor**
  W. Q. Lundmark
  75 N. Broadway
  Des Plaines, Ill.
- **Western Distributor**
  Hastings Distributors
  1605 Solano Avenue
  Berkeley, Calif.

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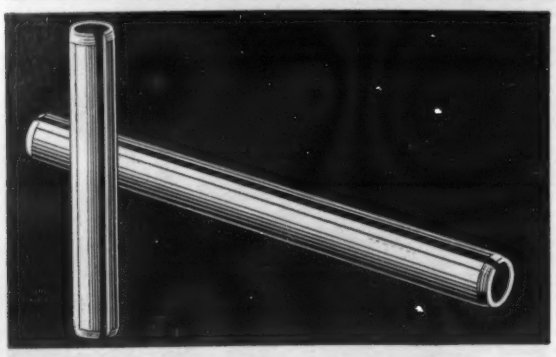

Corrosion-resistant and versatile . . . SEL-LOK spring pins of stainless steel

- Higher tensile and shear strength
- Complete range of sizes—1/16 x 3/16 through 1/2 x 4 in.—available immediately
- Fast, economical fastening—just drill and drive
- Eliminate costly tapping, reaming, peening, milling
- Lock securely; can be used repeatedly

SEL-LOK spring pins are also stocked in carbon steel (same sizes as stainless) and in beryllium copper in a complete range of sizes from 1/16 x 3/16 through 1/4 x 3 1/2 in. See your authorized distributor or write us for Bulletin 2331 and samples.

INDUSTRIAL FASTENER Division SPS

JENKINTOWN 24, PENNSYLVANIA

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UNIVERSAL

SELECT "O" RING KITS

Fills Replacement Needs on 85% of All Industrial Equipment

★ 180 "O" Rings in Each Kit—Sizes 1 to 25.

★ Patented Plastic Case Shows You "O" Ring Sizes in Kit at a Glance!

★ Interchange Data of All Leading "O" Ring Producers in Each Kit — All Manufacturers' Numbers Converted to Universal Numbers.

★ Buy Replacement Back-up Washers in these "O"-Ring Sizes.

TEFLON	$115.95
BUTYL RUBBER	$ 47.95
STANDARD COMMERCIAL (Buna N)	$ 24.50
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AN 6227 SERIES	$ 59.50

RETAINING RING

ECON-O-KIT

400 Truarc Cadmium Plated Rings – 84 Sizes – 70% of Ring Sizes Used in Industry

Save—eliminate many purchase orders for small quantities of retaining rings — Get most sizes used on your equipment with only ONE order — in one shockproof, plastic case. Sizes from 1/4 to 2 1/2 inches in the three most used Truarc series of internal, external and universal crescent ring designs. All rings meet National Aircraft Standards NAS 669 and NAS 670. Low priced at $34.50 per kit.

Installation and removal tools also available.

Packaged Merchandise Co.

3067 W. 117th St. • Cleveland 11, Ohio

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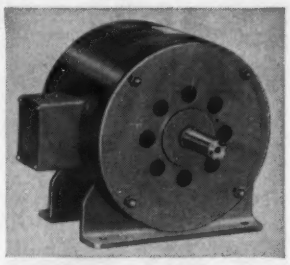
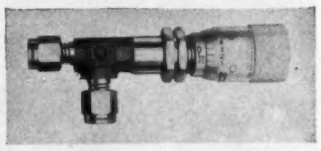
LOW-SPEED GENERATORS
brushless type rated 0.25 kva



Brushless, permanent magnet design with permanently lubricated ball bearings characterizes this NoBrush generator which delivers 60 cycles at 1200 rpm with power rating of 0.25 kva, three - phase. Unit withstands high ambient temperatures. Regulation is intrinsic. It can be used in explosive atmospheres, and in tachometer and pilot generator services. By use of rectifier on output, it can be used as a flasher generator for large statically excited alternators. Unit measures 10 1/2 x 9 x 6 1/2 in. and weighs 50 lb. Larger ratings are available in both 1200 and 1800-rpm operating speeds. • **Georator Corp.**, Box 472, Manassas, Va.

▲ For more details circle NED-201 M on enclosed inquiry slip ▲

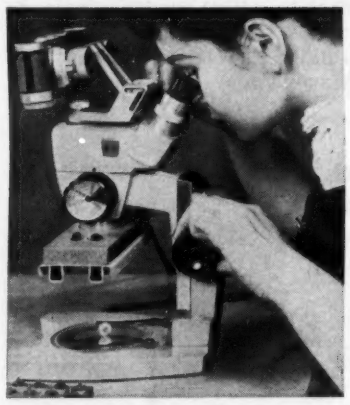
MICROMETER VALVE HANDLE
sets valve stem to 0.001 in.



Now available for new or existing Nupro metering valves, micrometer handle permits exact settings. Handle is first set at zero with the valve closed. As the handle is turned to open the valve, the axial position of the stem can be read to 0.001 in. It is stainless steel with a silver mist chrome finish. • **Nuclear Products Co.**, 15635 Saranac Rd., Cleveland 10, Ohio.

▲ For more details circle NED-202 M on enclosed inquiry slip ▲

STEREO MICROSCOPE CAMERA
takes 3-D microphotographs



A 35-mm Stereo Graphic camera mounted on an American Optical Cycloptic stereoscopic microscope produces permanent three - dimensional microphotographs. In use, the microscope is brought into sharp focus, the camera is swung into position over the eye pieces, and the cable release is used to snap the shutter. The camera is mounted out of the way, but ready for instant use. Subject is illuminated by a self-contained, color corrected, fluorescent light package which is clamped to the microscope objective. • **Graflex, Inc.**, 3750 Monroe Ave., Rochester 3, N. Y.

▲ For more details circle NED-203 M on enclosed inquiry slip ▲

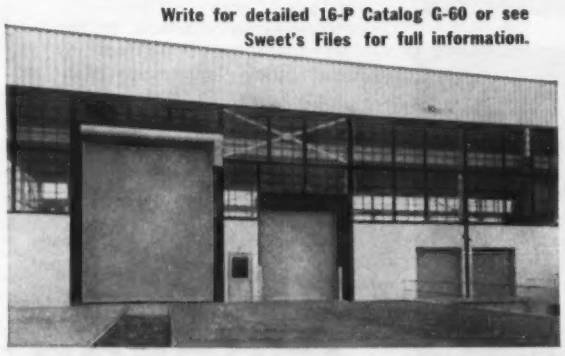
Mahon rolling steel doors

SAVE SPACE
SAVE SERVICE
SAVE COSTS

in sizes and types to fit your application

Rolling Steel Doors are the proven and best way of closing any type opening. For a plant, distribution center or loading dock—in new or remodeled facilities—Mahon has the right Door for the job. Rugged, easy operating, Bonderized (and synthetic baked enamel protected) Steel Doors, power or manually operated, will give you long, trouble-free service. If damaged, they are completely repairable by an experienced Mahon crew . . . service contracts available.

Write for detailed 16-P Catalog G-60 or see Sweet's Files for full information.



M A H O N

THE R. C. MAHON COMPANY • DETROIT 34, MICHIGAN

Manufacturing Plants—Detroit, Mich. and Los Angeles, Calif.
Sales Offices or Representatives Located in All Principal Cities

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JOHNSON
NO. 133
FORGE FURNACE
ONLY
$246.00
F.O.B. FACTORY

Fast, clean, economical heat

Provides high, fast heat for metal bending, metal forging, occasional heat treating, plowshare sharpening, metal forming and preheating. Clean, efficient, equipped with four burners, operates economically on any type of gas. Completely safe. Special solenoid safety valve turns gas off automatically when blowers are turned off. High temperature, insulated firebox, 5 1/2" by 7 1/2" by 27" gives maximum efficiency. Furnace has extending front bar to support long pieces or hold tools.

Two end burners have separate valves, may be turned off for smaller jobs. 100% safety shut-off and constant burning pilot optional. Maximum 400,000 BTU output.

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if it burns gas look to johnson
Since 1901
JOHNSON GAS APPLIANCE CO., 591 E AVE. N.W., CEDAR RAPIDS, IOWA

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Viscous Materials

FLOW LIKE WATER

through

Parks-Cramer Jacketed Pipe and Fittings

You can't find a better way to convey asphalt, rosin, wax, sulphur, gums, syrups, or other high melting point solid or viscous materials than through Parks-Cramer Jacketed Lines.

Steam, hot water, hot oil, or Dowtherm keep the contents in a quick moving liquid state. Plug-ups are eliminated.

Jacketed Valves and Fittings are stocked in Semi-Steel with Ductile Iron, Ni-Resist, Steel and Stainless Steel available on order.

Piping, Valves and Fittings are stocked in Semi-Steel and are available from 1 1/4" to 8" line size. These include two- and three-way Valves, all standard fitting types, as well as Expansion Joints, Strainers, Flexible Hose and Relief Valves.

Write for Catalog 356

Parks-Cramer Company
Fitchburg 3, Mass., U.S.A.

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FILTERS air to protect costly tools
REGULATES air pressure to exact needs
LUBRICATES moving parts to cut wear

When you design with air, start each circuit with a Schrader Lub-Air-Ator to keep valuable equipment running at peak efficiency. This important maintenance device lengthens equipment life. You can use one, two, or all three sections, individually or in combination. Compact. No moving parts. Can be serviced without disturbing pipe connections. Specification literature on request.

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QUALITY AIR PRODUCTS

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CRANE RUNWAY MATERIAL

from one dependable source

PER-FIT CRANE STOPS • CRANE RAIL CLIPS
HOOK & ANCHOR BOLTS • SPLICE BARS
CRANE RAIL-12# THRU 175#

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Standard Models
Hydraulic Bore Size 1½ to 12"
Air Bore Size 1½ to 14"

Quality Construction Throughout.
Guaranteed Top Performance.
No Costly Down Time.
Precision Designed—Heavy Duty Service.
Conforms to JIC Specifications.

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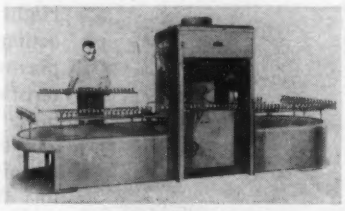
Specials built to your specifications

MILWAUKEE CYLINDER CO.
Division of L. & M. Machine Company
5755 SOUTH PENNSYLVANIA AVENUE • CUDAHY, WISCONSIN

For more details circle NED-209 M on enclosed inquiry slip

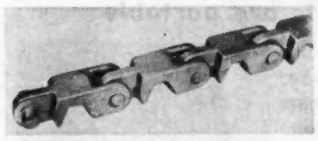
MULTICOAT PAINTING MACHINE
can finish 30,000 parts per hour



Multiple-coat operations involving prime and finish coating, baking, and metallizing are performed by the Ride-the-Rod coating machine. Parts are loaded on work-holding spindles, 20 or 30 of which are mounted on carrier rods. For long runs, parts can be loaded on rods automatically and coated at speeds up to 30,000 per hour. Machine's speed is adjustable from 200 to 6000 carrier rods per hour. Rotating or nonrotating work holders can be used, and rotating speed is independently adjustable. Machines are furnished with either dry type or water-wash spray booth. • **Finish Engineering Co.**, 921 Greengarden Rd., Erie, Pa.

For more details circle NED-211 M on enclosed inquiry slip

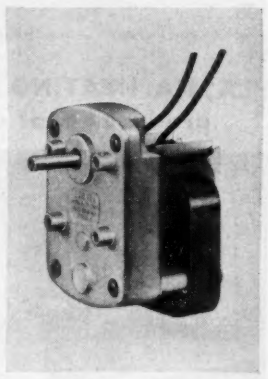
FORGED CONVEYOR CHAIN
pin is forged into the link



Made of Type 4140 alloy steel, this conveyor chain consists of forged links which are spread open after machining, then closed on the integrally forged pin of the mating link. This design prevents accidental disassembly and adds to the chain life and strength. The pin has the same strength as the link itself. Chain is usable in a wide range of material handling systems. • **Kropp Speed-Way, Inc.**, Union City, Tenn.

For more details circle NED-212 M on enclosed inquiry slip

GEAR MOTOR
has 12 lb-in. torque at 6 rpm

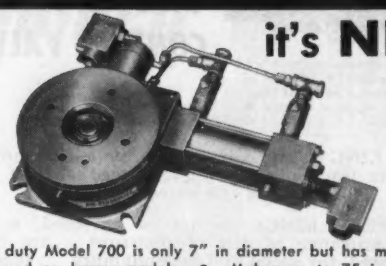


Designed for use in vending and business machines, or as a control device for conveyors and mixers, this compact FB enclosed gear motor with its field mounted directly behind the gear housing delivers output speeds from 6 to 120 rpm. Output running torque is 12 lb-in. at 6 rpm for continuous duty. It has a nylon bobbin tested for up to 120° C, helical rotor pinions, and quiet linen base phenolic gears in the first stage, with hardened spur gears and pinions in the other stages. Brake or clutch can be built in without increasing dimensions. Higher or lower speeds and higher intermittent torque ratings are available. • **Brevel Products Corp.**, 639 W. 26th St., New York 1, N. Y.

For more details circle NED-213 M on enclosed inquiry slip

LOW COST 7" INDEX TABLE

it's NEW



The heavy duty Model 700 is only 7" in diameter but has most of the features found on larger models • Makes up to 75 indexes per minute • Handles maximum work load of 100 lbs. • Maximum power stroke is 3 times line pressure • Operates on pressures from 60 to 175 p.s.i. • Clockwise rotation with either 4, 6, 8 or 12 stations standard • Others up to 24 stations and counter-clockwise rotation, to order • Bolt larger sub-plate (up to 14" dia.) to ground steel table for larger work area • Positive index—no override • Adjustable cushion and speed control • Each table checked for guaranteed accuracy of index (± .0015"), concentricity and parallelism.

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AIR-HYDRAULICS INCORPORATED
231 HUPP AVE.
JACKSON, MICHIGAN

For more details circle NED-214 M on enclosed inquiry slip

ALBION'S NEW ALaTHANE* WHEELS

* POLYURETHANE ESTOMER

WEAR LIKE STEEL... PROTECT LIKE RUBBER

Truly a *wonder wheel* for all rugged industrial applications where high capacity and floor protection is a "must". Albion's amazing new ALaTHANE wheels are conservatively rated for 5 times the service life of rubber and they're extremely resistant to abrasives, have load capacities of steel wheels, resist a permanent "set" under static loads and are impervious to practically all chemicals, solvents, etc.

Better yet... ALaTHANE wheels—or complete casters, are immediately available from stock in 6" to 12" wheel diameters with clean, machine-faced steel hubs and roller bearings.

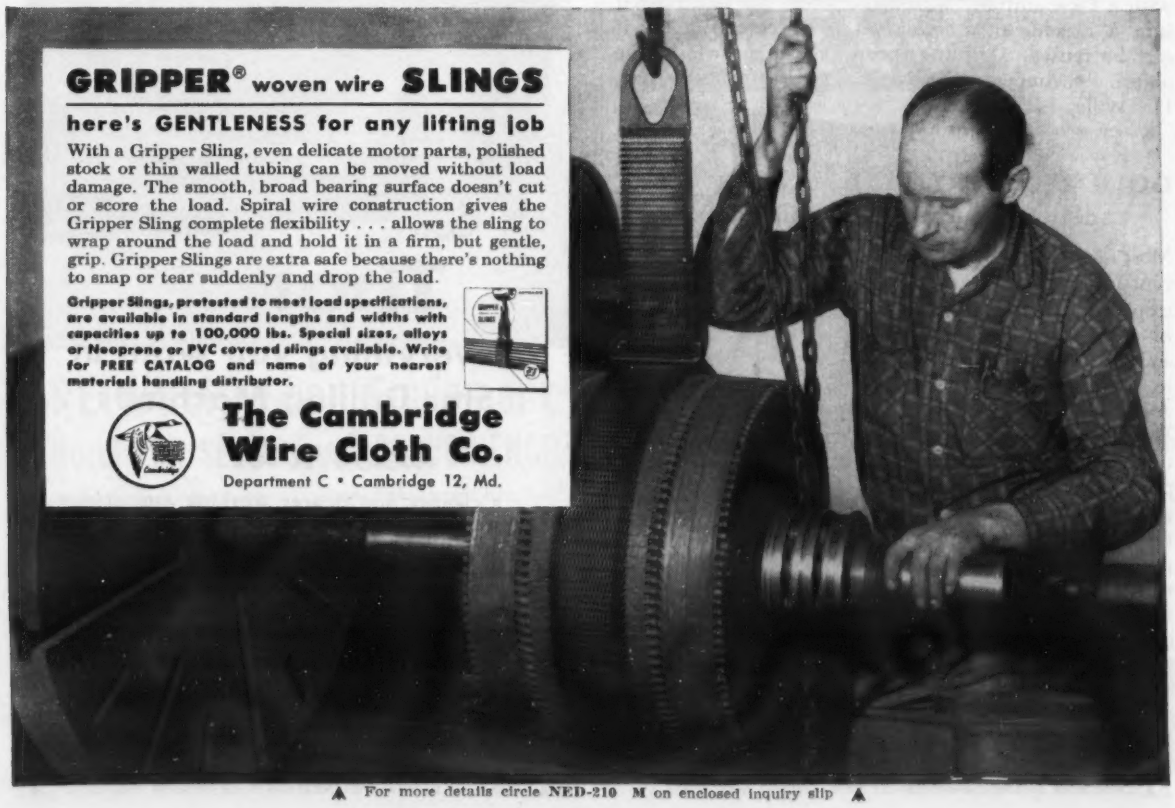
So—if you want the quiet resiliency and protection of rubber, the capacity and lasting durability of steel, plus a new wheel economy . . . you'd better specify Albion's ALaTHANE.

Remember . . .
ALaTHANE *for both wheels and complete casters!*

Write today for your free copy of the new ALaTHANE wheel and caster folder.

ALBION INDUSTRIES, inc.
ALBION, MICHIGAN

For more details circle NED-215 M on enclosed inquiry slip



GRIPPER® woven wire SLINGS

here's GENTLENESS for any lifting job

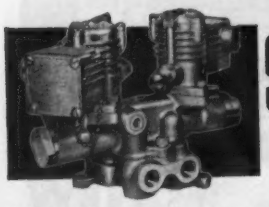
With a Gripper Sling, even delicate motor parts, polished stock or thin walled tubing can be moved without load damage. The smooth, broad bearing surface doesn't cut or score the load. Spiral wire construction gives the Gripper Sling complete flexibility . . . allows the sling to wrap around the load and hold it in a firm, but gentle, grip. Gripper Slings are extra safe because there's nothing to snap or tear suddenly and drop the load.

Gripper Slings, pretested to meet load specifications, are available in standard lengths and widths with capacities up to 100,000 lbs. Special sizes, alloys or Neoprene or PVC covered slings available. Write for FREE CATALOG and name of your nearest materials handling distributor.

The Cambridge Wire Cloth Co.
Department C • Cambridge 12, Md.

For more details circle NED-210 M on enclosed inquiry slip

no coil burnout with



SPEED KING®

PILOT OPERATED CONTROL VALVES

Built to JIC standards • interchangeable pilots • choice of mounting types, optional features • ac or dc, any voltage • ¼ to 1 in. NPT.

SPEED KING solenoid pilot coils, potted in molded resin, are unconditionally guaranteed against coil burnout for the life of the valve!

And, SPEED KINGs are totally enclosed, sealed against entrance of dirt or moisture . . . are fully air-operated, for speed and dependability . . . feature a hard-chrome plated stainless steel plunger floating in O-rings, to eliminate wear-producing metal-to-metal contact.

For multi-million cycle dependability, specify Valvair® SPEED KING control valves.

8007-3

Write for free Bulletin D-58. Address: Bellows-Valvair, Akron 9, Ohio, Dept. NED-1260

Bellows-Valvair
AKRON 9, OHIO
DIVISION OF INTERNATIONAL BASIC ECONOMY CORPORATION (IBEC)

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HOW TO REDUCE HANDLING AND STORAGE COSTS

Low-Cost Flexible Stackbin System Saves Space, Time and Labor

Stackbin®-Stackrack® Combinations are the ideal way to minimize parts, tools, materials handling. Stackbins are portable containers, so you can carry materials throughout your process without transferring contents to any other container. Stored in Stackracks, every Stackbin is instantly accessible when it's needed. You never disturb another bin. Hopper fronts on Stackbins provide visibility and accessibility to the materials. Available in 7 sizes, Stackbin-Stackrack Combinations make most efficient use of floor space. With inexpensive Adapters any small units can be stacked on larger units. Related items can be kept in one place. Individual units lock together: no tools, no setup time needed.

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All Stackbin Products Sold Direct
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Mfgd. and sold in Canada exclusively by Wickware-Stackbin, Ltd., Perth

STACKBIN SYSTEM
"Stacked and Still Accessible"

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CITY_____ ZONE_____ STATE_____

RADIO CORPORATION of AMERICA
COMMUNICATIONS PRODUCTS
CANONSBURG, PA.

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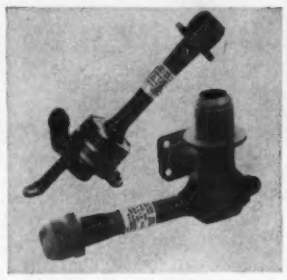
JET PUMPS for air, gas, or fluid ejection



High volume output by action of small, high-pressure input is characteristic of these custom built jet pumps for air, gas, and liquid pumping; entrainment; and mixing in aircraft, automotive, marine, and chemical fields. Aluminum models, protected from abrasion and corrosion, are used to transfer fuel and abrasive fluids, and mix active chemicals. Small volume of high pressure fluid pumped through the jet picks up and delivers a larger volume of fluid at lower pressure. Typical performance is a 3.5 gpm discharge against a 32-in. head, utilizing a 1.29 gpm, 20 psi input flow. Standard capacities range to 50 gpm. • **Allen Aircraft Products, Inc.**, Box 271, Ravenna, Ohio.

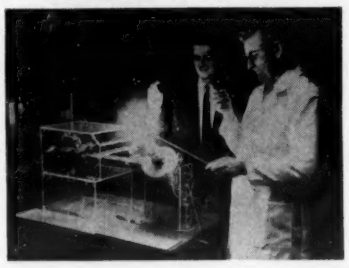
▲ For more details circle NED-219 M on enclosed inquiry slip ▲

REMOTE THERMOMETERS multirange units are portable

Used with any YSI 400 Series interchangeable probe, the Model 42 Thermistemp Tele-Thermometer will continuously indicate the temperature of liquids, gases, semisolids, and surfaces on a 4-in. meter. The transistorized multirange instrument is battery powered for remote indication in −40 to 150° C and −40 to 300° F ranges in two models. Each has three overlapping ranges. Accuracy is within ±0.5° C or ±1° F. Its aluminum case measures 4 x 5½ x 6 in. • **Yellow Springs Instrument Co.**, Box 106, Yellow Springs, Ohio.

▲ For more details circle NED-220 M on enclosed inquiry slip ▲

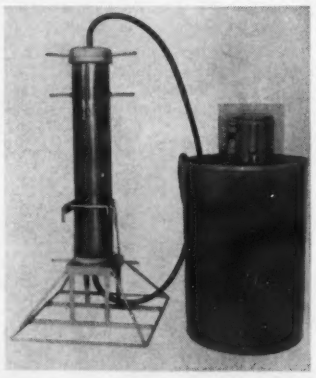
PLASMA HEATING TORCH produces heat over 3000° C



None of the parts of the plasma torch ever heat, yet it produces temperatures in excess of 3000° C. A high frequency electromagnetic field is used to dissociate and ionize gas molecules into their component atoms. Allowing them to recombine into the original state liberates absorbed energy in the form of heat. The electromagnetic field is created in a coil by a Type 5866 transmitting triode operating at 27 mc with an output of 250 w, or in a coaxial cable by a Type 7292 Magnetrol which operates in the S-band (2450 mc) with a 1-kw output. Nitrogen or other gas is converted into a plasma and, because it is never consumed, it can be reused. Heating occurs on the surface of the object. • **Amperex Electronic Corp.**, 230 Duffy Ave., Hicksville, L. I., N. Y.

▲ For more details circle NED-221 M on enclosed inquiry slip ▲

GOLD RECOVERY UNIT salvages metal lost in plating

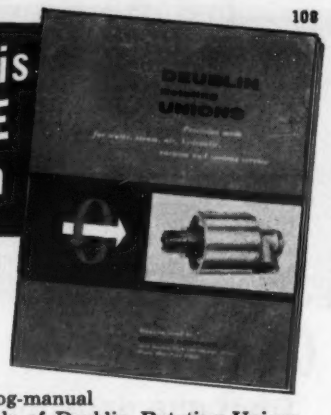


Most of the 4 to 10 per cent of gold lost in electroplating is recovered by the Gold Saver recovery unit, designed to become part of the gold plating process. Unit consists of a column of BB-size resin particles which capture gold in solution that is usually lost and a pump for circulating this gold-water solution through the resin column. It is attached to a tank into which the plated item is dipped after the rinse or drag-out tank. When resin is saturated, it can be burned by the plater to recover gold, sent to a refiner, or returned to Technic laboratories for reclaiming. Price of unit is about $600. • **Technic, Inc.**, Box 965, Providence 1, R. I.

▲ For more details circle NED-222 M on enclosed inquiry slip ▲

108

Send For This NEW FREE Catalog On



DEUBLIN Rotating UNIONS

A completely new, 20 page illustrated catalog-manual showing all the models of Deublin Rotating Unions for water, steam, air, hydraulic, vacuum and coolant service for the machines you make or use, is just off the press to help you get trouble-free service and reduce your "down-time" and keep maintenance to a minimum. Shown are rotating joints for water and steam service; monoflow and duoflow unions; single and double passage rotating air unions; hi-pressure lo-torque unions; extra capacity air unions; rotating siphon pipe unions; in-the-shaft mounted unions; hydraulic rotating unions and hi-speed coolant unions. Complete with full engineering data, cut-away drawings, plus instructions for installing, lubricating and servicing Deublin unions.

Write for your free copy today.

DEUBLIN COMPANY
1925 STANLEY ST. • NORTHBROOK, ILL.

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Thor

Everything you want in Star Drilling Machines . . .

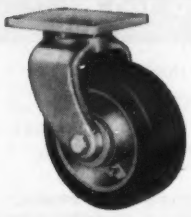
and more!

. . . a cleaner and clearer working atmosphere among many other things! Indoor operations involving concrete, block, brick, stone and other masonry materials are drilled clean by Thor's auxiliary dust-extracting cylinders. Powerful siphoning action sucks small chips and objectionable dust through the hollow steel and back head to waiting receptacle. This assures an altogether safer, cleaner, healthier and more efficient operation. Also eliminates messiness of wet drilling. See your Thor factory representative. Thor Power Tool Company, Aurora, Ill. Branches in all principal cities.

▲ For more details circle NED-224 M on enclosed inquiry slip ▲

This caster

• beats corrosion • routs contamination



Here's a caster you can steam clean without (a) corrosion or (b) loss of lubricants.

It's one of Bassick's "BS" series, swivel, or "BT" series, rigid, casters. They're corrosion resistant, effect important maintenance savings under corrosive conditions—in chemical plants, food processing plants, laundries, or wherever casters are exposed to the elements.

And, they're specially designed to avoid contamination to environment: No nooks, crannies, cracks, or recesses to hold dirt. Completely sealed bearings.

Bassick "BS" and "BT" casters come with 5" and 6" wheels with a variety of 2" soft treads. Load capacities to 410 lbs. per caster. Write for complete data. THE BASSICK COMPANY, Bridgeport 5, Conn. *In Canada:* Belleville, Ont.

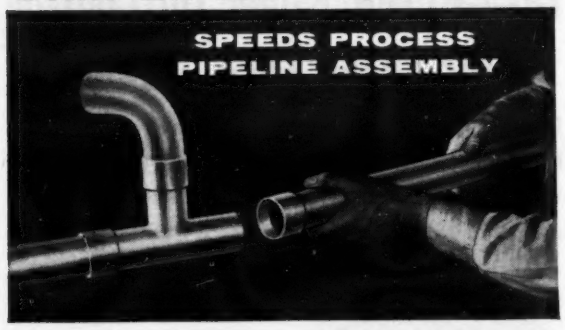
"BS" series, swivel-type, similar "BT" is non-swiveling.

0.30

Symbol of SW Excellence **Bassick** A DIVISION OF **STEWART-WARNER CORPORATION**

▲ For more details circle NED-225 M on enclosed inquiry slip ▲

SIMPLIFIED ALIGNING



Speedline® ALIGNING CONNECTORS

- Fit right over ends of pipe and fittings
- Permit *pre-assembly* prior to welding or brazing
- Prevent misalignment
- Eliminate welding "icicles"

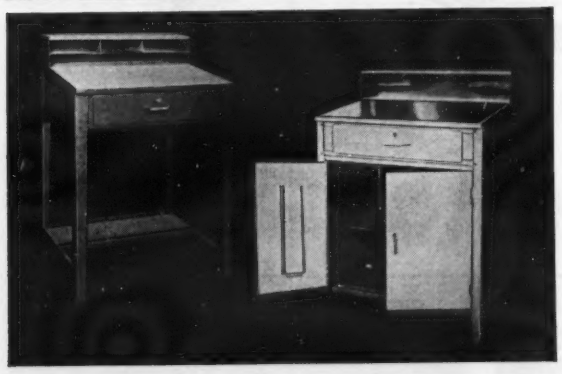
Speedline Aligning Connectors save time—and costs—in assembly of the most complex system layouts . . . as do the complete line of long tangent Speedline fittings. A Distributor near you stocks Speedline Fittings—ask him for details, or write for a Speedline catalog today.

1007

Speedline CORROSION-RESISTANT FITTINGS
Stainless Steel • Aluminum • Special Alloys

Manufactured by HORACE T. POTTS COMPANY • 532 E. Erie Ave. • Phila. 34, Pa.

▲ For more details circle NED-226 M on enclosed inquiry slip ▲



REPUBLIC Shop Equipment
BUILT FOR SERVICE and CONVENIENCE

Republic Shop Equipment . . . shop desks, work benches, tool cabinets, and other equipment . . . is designed and built for heavy-duty service and shop convenience.

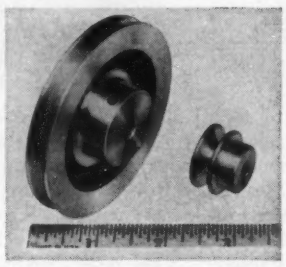
The Republic Shop Desk, for example, offers sit-down convenience with stand-up comfort. Plenty of drawer and storage space with flat key-type locks.

To learn more about Republic built-to-take-it shop equipment, call your Republic representative, or write direct.

REPUBLIC STEEL
BERGER DIVISION
1034 Belden Ave. · Canton 5, Ohio

▲ For more details circle NED-227 M on enclosed inquiry slip ▲

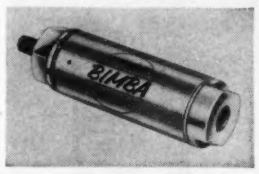
SMALL DIAMETER PULLEYS
for 1/4-in. V-belt type drives



Light machinery and instrument drives are applications for QV line of small diameter pulleys, made with groove dimensions to RMA standards. Eleven sizes from 1 to 6½ in. OD are stocked in ½-in. increments for 2L (¼-in.) V-belt drives. Maximum width is ¾ in., including a ⅜ in. extended hub. Stock bores include ¼, 5/16, ⅜, 7/16, and ½ in. Smallest sizes to 2 in. OD are steel and the larger diameters are aluminum alloy, webbed on the hub side. Bores and grooves of all sizes are machined in a single chucking for concentricity. • Climax Metal Products Co., 863 E. 140th St., Cleveland 10, Ohio.

▲ For more details circle NED-228 M on enclosed inquiry slip ▲

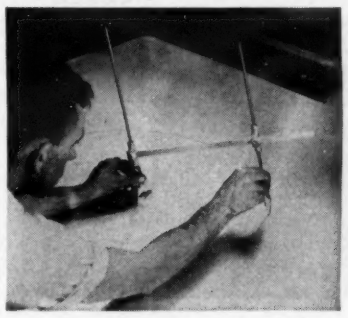
STAINLESS STEEL CYLINDERS
air types have 1 1/16-in. bores



Rolled-in construction on rear as well as front head constitutes one of the improvements made in double-acting stainless steel air cylinders. These 1 1/16-in. bore cylinders are available with up to 3-in. strokes. Body wall thickness has been increased by 50 per cent, and mirror smooth finish of the body, plus piston U-cups assure long service life. • Bimba Mfg. Co., 101 Main St., Monee, Ill.

▲ For more details circle NED-229 M on enclosed inquiry slip ▲

PIPE FITTING MARKER
prepares cutting lines accurately



Headers, laterals, compound curves, and flat surfaces are marked quickly and precisely for pipe fitting, sheet metal work, and tank fabrication by the Sury universal marker. Surfaces are prepared for joining pipe of the same or different dimensions at any angle, pipe to or through a flat surface at any angle, pipe to ells of the same or different dimensions at angle, and pipe to any compound curve. The size of cut and the joining angle are preset on the marker in a few seconds, the tool is placed in position, and the lines are drawn. It can also be used for the drawing of ellipses. • Boyd Brothers & Sullivan, Box 1166, Wheeling, W. Va.

▲ For more details circle NED-230 M on enclosed inquiry slip ▲

NEW

REPUBLIC CLIP SHELVING

Republic Clip Shelving allows you to use every square inch of your valuable floor space. You can save time and money, too.

Here is a complete shelving line, including shelves, parts, accessories and related shop items. Every piece is Bonderized.

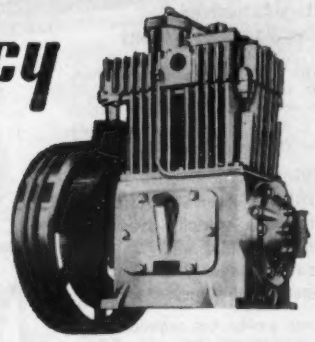
Republic Clip Shelving erects fast and easy. No tools are required. It can be rearranged to satisfy shelving needs as they arise. It is completely salvageable. The new Shelf Clip requires no stud or other special fasteners. The shelf snaps firmly into place.

Let your Republic representative storage engineer your shelving problem for you. Call him anytime.

REPUBLIC STEEL
BERGER DIVISION
1034 Belden Ave. · Canton 5, Ohio

▲ For more details circle NED-231 M on enclosed inquiry slip ▲

Starting?
LOADLESS WITH Quincy



A Quincy Compressor gets away to a smooth start each time because of patented Loadless Starting. This feature keeps the compressor unloaded until full operating speed is reached. The same exclusive system also provides free-rolling Loadless Stops.

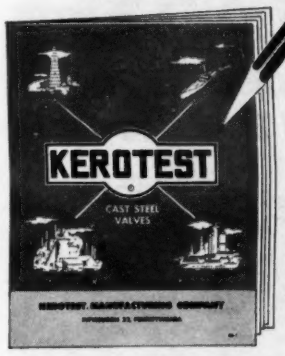
Other features include Safe-Q-Lube pressure lubrication, light-weight automotive type pistons, cushioned steel valves and perfectly balanced crankshaft. Authorized service available across the country — around the clock.

Models from 1 to 90 CFM. *Write for catalog.*

QUINCY COMPRESSOR CO., Dept. N1260, Quincy, Ill.
Makers of the World's Finest Air Compressors

▲ For more details circle NED-232 M on enclosed inquiry slip ▲

IF YOU USE VALVES



YOU NEED THIS CATALOG!

Kerotest has been producing highest quality valves for the past 50 years. Our new catalog gives dimensions, specifications and working tables to help you specify the right valves for your applications.

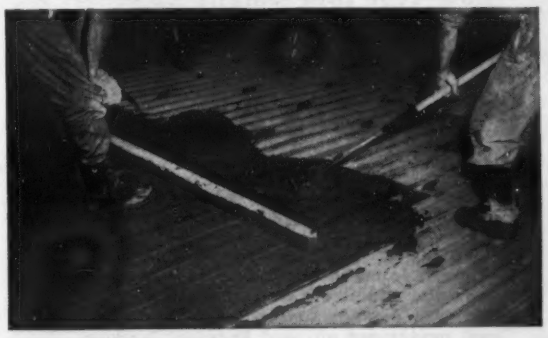
WRITE FOR YOUR COPY—Today!

KEROTEST®

KEROTEST MANUFACTURING COMPANY
2522 Liberty Avenue, Pittsburgh 22, Pa.

In Canada, Kerotest products are manufactured and distributed exclusively by Guelph Engineering Company, Guelph, Ontario.

▲ For more details circle NED-233 M on enclosed inquiry slip ▲



Save time and money with TRUSCON 24" FERROBORD FORMS for CONCRETE SLABS

Economical . . . eliminates both cost of materials for temporary shoring, and time for erection and removal. Long spans eliminate close supporting beams, reducing costs for structural supports. And, 24" FERROBORD® covers more area faster. Send for Brochure K-132.

REPUBLIC STEEL
TRUSCON DIVISION
Youngstown 1, Ohio
NAMES YOU CAN BUILD ON

▲ For more details circle NED-234 M on enclosed inquiry slip ▲

NEW There IS a Difference

in HIGH VACUUM PUMPING SYSTEMS

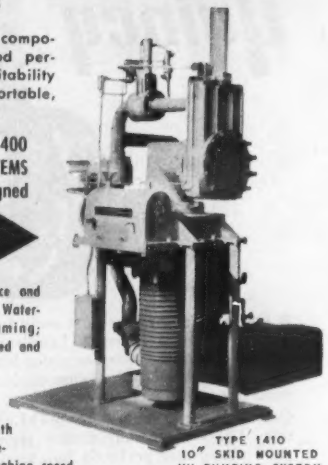
Complete, Factory-Assembled, Tested Pumping Systems

Using only high vacuum components of demonstrated good performance, reliability and suitability . . . Skid mounted or portable, ready for quick installation.

GENERAL VACUUM SERIES 1400 DIFFUSION PUMPING SYSTEMS Incorporate specially designed TWO-STAGE TRAP with Liquid-Nitrogen and Water-Cooled Baffles

This trap provides high conductance and low liquid-nitrogen loss rate. Water-cooled stage reduces backstreaming; liquid-nitrogen stage increases speed and lowers blank-off.

Series 1400 Pumping Systems give you the perfect Pumping Package in sizes from 2" to 32" with high speed backing pumps, or mechanical boosters for maximum roughing speed.



TYPE 1410 10" SKID MOUNTED HV PUMPING SYSTEM

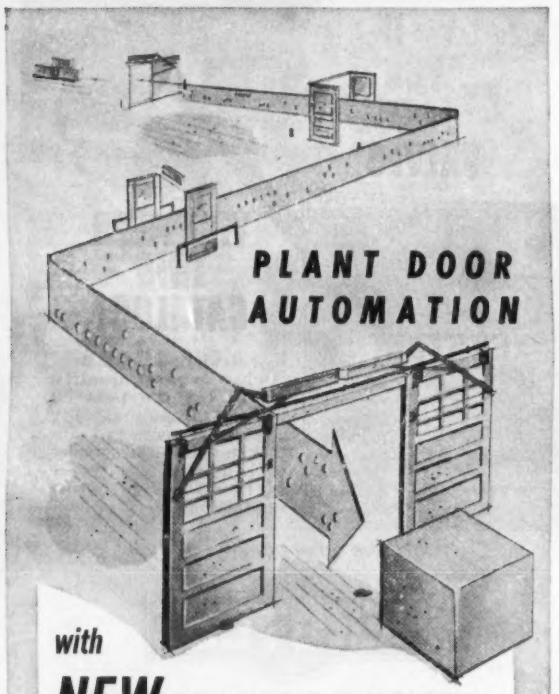
Manual or Automatic Controls. Maximum Accessibility.

Literature on Request

GENERAL VACUUM CORPORATION

HICKS AVENUE, MEDFORD 55, MASSACHUSETTS

▲ For more details circle NED-235 M on enclosed inquiry slip ▲



with

NEW MAGIC-DOOR MHO OPERATORS

*Low-cost investment . . . 67% return each year!**

Get maximum productivity at minimum cost by speeding materials flow throughout your plant. You can do it by extending automation to your plant doors that swing, slide or fold, with MAGIC-DOOR MHO Pneumatic Operators. Full powered for both opening and closing, MHO Operators will open and close your doors automatically and bring you BIG returns each year through these benefits: **controlled traffic flow; faster materials handling; reduced door and equipment damage; less spillage and cargo damage; conservation of warm and cool conditioned air, and improved working conditions and employee morale.**

Write for free data sheets and a folder on the MAGIC-DOOR MHO (Materials Handling Operators) line.

**A recent study of* MAGIC-DOOR *equipment in automatic operation of double swinging plant doors revealed a 67% return on the investment each year! Further information on request.*

STANLEY HARDWARE
Division of The Stanley Works
MAGIC-DOOR® SALES
Dept. L, 58 Lake Street, New Britain, Connecticut

STANLEY
REG. U. S. PAT. OFF.

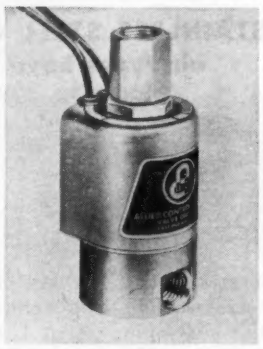
▲ For more details circle NED-236 M on enclosed inquiry slip ▲

TUBULAR RELAY
resists shock and vibration

Tubular construction of the Series 123 relay lends it to in-line chassis mounting for printed circuits or conventional clamping or encapsulation where high shock or vibration are encountered. Its contact rating is 2 amp at 115 v ac or 24 v dc for 30,000 operations; or up to 50 million operations on lower currents. Size of the hermetically sealed, dry nitrogen filled unit is 1⅛ in. long by 15/32 in. diameter. Coil resistance is 0.05 ohm, operation time is 5 milliseconds, and release time is 7 milliseconds. Ambient temperature range is −65 to 85° C. • **Wheelock Signals, Inc.**, Branchport Road, Long Branch, N. J.

▲ For more details circle NED-237 M on enclosed inquiry slip ▲

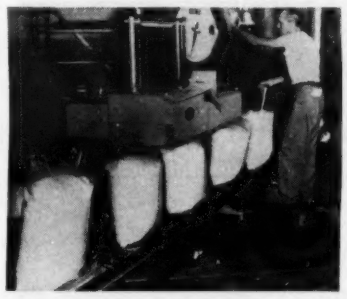
SOLENOID VALVES
quiet units have cool coils



Compact two and three-way solenoid valves are available in normally-open and normally-closed types. They are cool and quiet in operation and are UL-approved for general usage. Stainless steel valves are designed for high pressure and flow in ⅛ and ¼-in. sizes, operate on alternating or direct current, and have conduit or grommet housings. • **Allied Control Co.**, 2 E. End Ave., New York 21, N. Y.

▲ For more details circle NED-238 M on enclosed inquiry slip ▲

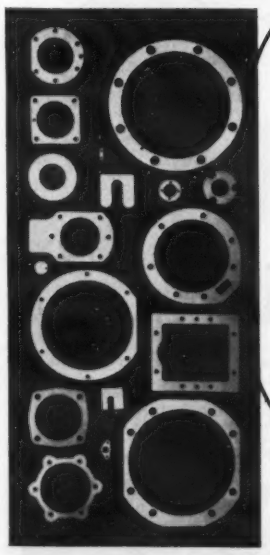
POLYETHYLENE BAGS
heavy duty type for bulk products



Transparent, colored - opaque, and tinted translucent shades are available in these chemically inert, heavy duty polyethylene bags. Impervious to moisture and resistant to most alkalis and acids, they are closed by the "tempered" seal process. Chemicals, seeds, fertilizers, and other bulk products can be packaged in the bags without alterations in filling and handling equipment. The 8-mil thickness polyethylene bags withstand a 30-ft drop test when loaded to 50 lb. Their moisture barrier properties permit use for outside storage. Art design and four-color printing are available. • **Kordite Co.**, Dept. 1, Macedon, N. Y.

▲ For more details circle NED-239 M on enclosed inquiry slip ▲

EASY WAY TO CUT COSTS on GASKETS, WASHERS and SHIMS



A wide variety of dies accumulated over more than 50 years of service to industry, enables Chicago-Wilcox to supply many of your gasket, shim and washer needs without a die charge.

Whether you need just a few items or large quantities, these stock dies make it easy for you to save money and get faster delivery. Available in metallic, non-metallic and plastics to meet your production requirements.

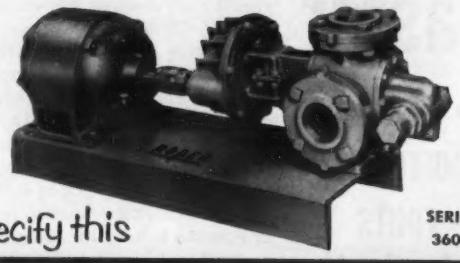
Find out about WIL-PAK PLASTIC SHIM STOCK that identifies thickness by both color and gauge number. Write for Bulletin No. 570.

Write for Stock List and Prices.

CHICAGO-WILCOX Mfg. Co.
7713 South Avalon Avenue, Chicago 19, Illinois

▲ For more details circle NED-240 M on enclosed inquiry slip ▲

For positive, reliable pump service for your liquid transfer operations...



Specify this SERIES 3600

ROPER General Purpose PUMP
40 TO 300 GPM . . . TO 100 PSI

- Handles a wide range of thick or thin liquids
- Self-lubricated by liquid being pumped
- Totally-enclosed gear reduction—choice of 3 ratios
- Furnished on bed plate, with or ready to receive standard motor
- Use indoors or outdoors . . . no pump house needed

Roper Hydraulics, Inc.
COMMERCE, GEORGIA

ROPER ROTARY PUMPS

▲ For more details circle NED-241 M on enclosed inquiry slip ▲

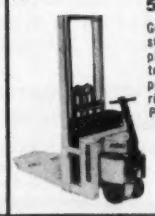
GO-GETTER *Finger Tip Control for Speed, Ease, Safety*

Go-Getter powered lift trucks are available in six basic models in each of four series (stand-on or walkie, explosion proof or standard) with a range of sizes and capacities in each.

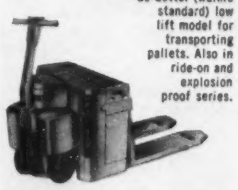
The Go-Getter is fully powered for both traction and lift. Safety factors include fingertip lift control and warning horn. Dynamic brake for down-grade control and deadman mechanical brake for positive stops are controlled by a single directional switch. Stand-on models give the operator a clear view in any direction of travel. Position of operation is fully inside the truck, offering protection from obstructions.

INDEX No. 54.11
Go-Getter low-lift platform model (ride-on explosion proof) for transporting skids. Also in standard and walk-along series.

INDEX No. 52.12
Go-Getter (Walk-along standard) high lift platform model for transporting and high piling skids. Also in ride-on Explosion Proof series.

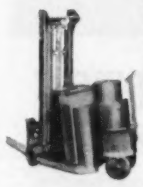


INDEX No. 52.21
Go-Getter (walkie standard) low lift model for transporting pallets. Also in ride-on and explosion proof series.

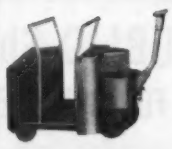


INDEX No. 53.22
Go-Getter (stand-on standard shown with overhead guard) high fork lift straddle model for narrow aisle tiering of pallets or skids. Also in walk-along and explosion proof series.

INDEX No. 55.23
Go-Getter (walk-along explosion proof) counterbalanced high lift fork model for tiering skids or pallets. Also ride-on and standard models.



INDEX No. 52.30
Go-Getter (Combination walk-along rider) towing tractor. Also in walk-along only and standard and explosion proof ride-on series.



REVOLVATOR CO.
ESTABLISHED 1904

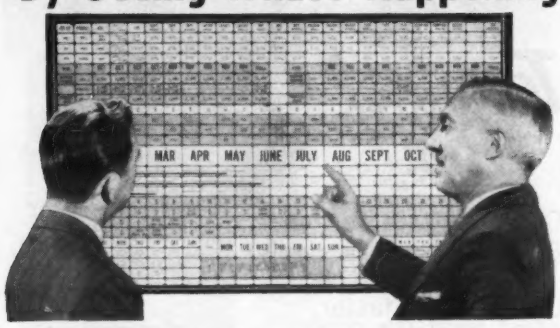
Designers and Manufacturers of Portable Elevators, Power and Hand Lift Trucks, Hydraulic and Traction Elevators, Carboy and Barrel Dumpers, Portable Cranes, Positioners, Storage Racks, Turntables and Other Material Handling Equipment.

8732 Tonnele Ave.,
NORTH BERGEN, NEW JERSEY

Sales Representatives in Leading Centers

▲ For more details circle NED-242 M on enclosed inquiry slip ▲

You Get Things Done Better By Seeing What's Happening



BOARDMASTER VISUAL CONTROL

- ★ Gives Graphic Picture of Your Operations in Color.
- ★ Facts at a Glance - Saves Time and Prevents Errors.
- ★ A Simple, Flexible Tool-Easily Adapted to Your Needs.
- ★ Easy to Use. Type or Write on Cards, Snap on Board.
- ★ Ideal for Production, Scheduling, Sales, Inventory, Etc.
- ★ Compact, Attractive. Made of Metal. 500,000 in Use.

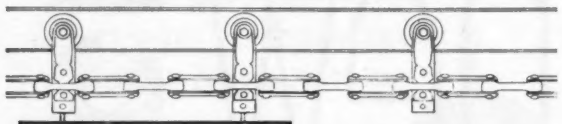
Complete Price $49.50 Including Cards

FREE 24-Page ILLUSTRATED BOOKLET N-500 Without Obligation

GRAPHIC SYSTEMS, Yanceyville, North Carolina

▲ For more details circle NED-243 M on enclosed inquiry slip ▲

LINK-BELT conveyor TROLLEYS



MADE IN LINK-BELT'S BALL AND ROLLER BEARING PLANT

Trolleys are only as good as their bearings. That's why Link-Belt trolleys are *MADE IN A BEARING PLANT BY BEARING SPECIALISTS.*

Simple and rugged, Link-Belt ball-bearing trolleys maintain rolling contact in all positions . . . create minimum power demand . . . give long, trouble-free service.

Available in 2- or 4-wheel types, riveted or bolted, for 3-, 4- or 6-in. I-beams.

NEW TROLLEY BOOK 2636 is now available. Send for your copy today!

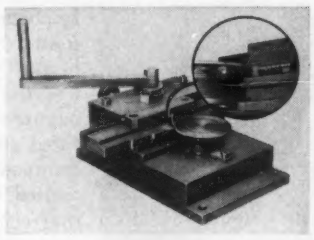
LINK-BELT

BALL BEARING CONVEYOR TROLLEYS

LINK-BELT COMPANY, Prudential Plaza, Dept. NED, Chicago 1, Ill. 15,006

▲ For more details circle NED-244 M on enclosed inquiry slip ▲

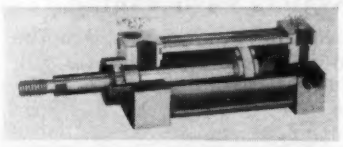
ROUND PART MARKER stamps in confined area



Long straight-body type is used in the Mecco confined-area marker to stamp in a limited area. A typical part can be marked within 3/64 in. of a flange on diameters from 7/16 to 1¾ in. and upward. Fixture includes an arbor for holding and rotating the part to be marked, type chase with holddown block, geared handle and linkage to rotate the part, and an adjustment screw to compensate for various diameters and depths of impression. • **M. E. Cunningham Co.**, 1025 Chateau St., Pittsburgh 33, Pa.

▲ For more details circle NED-246 M on enclosed inquiry slip ▲

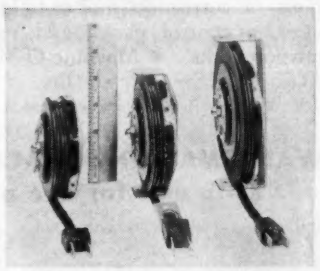
AIR CYLINDERS 1-in. bore units rated 200 psi



Teflon rod seal-wiper combinations and piston seals increase efficiency of Series B 1-in. bore air cylinders for high speed assembly machines and other uses where space is limited. Seals can be removed without disassembling the cylinder. Units are rated 200 psi and are offered in eight strokes from ½ to 5 in., with front flange, rear flange, trunnion, clevis, or foot mountings. Hard chrome-plated piston rods, steel end caps, and steel barrels with black oxide finish are standard. • **Hydro-Line Mfg. Co.**, 5600 Pike Rd., Rockford, Ill.

▲ For more details circle NED-247 M on enclosed inquiry slip ▲

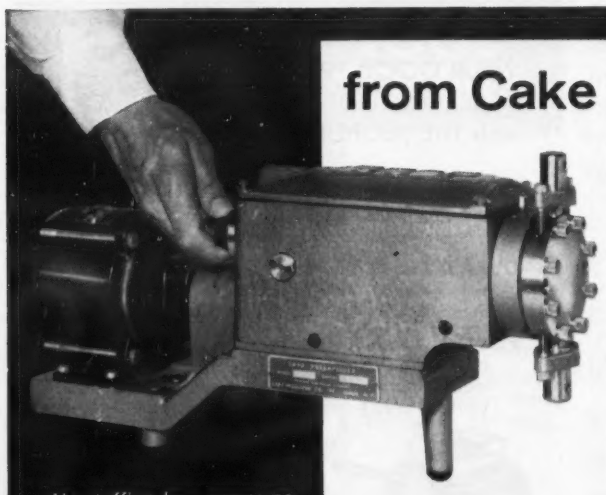
MINIATURE CORD REELS hold 4 to 10 ft of electric cord



"Slim profile" miniature electric cord reels are designed for concealed installation in original equipment. They are only 1¼ in. wide without housing. Available diameters of 3¼, 4, and 5 in. hold from 4 to 10 ft of 18-2 SPT electric cord. An exterior mounting, 3¼-in. diameter, 2-in. wide reel is also available with the same capacity range. The UL-approved units are lifetime lubricated and have a sealed spring motor compartment, and three-position gravity action pawl and ratchet. Units for vertical and horizontal mounting are available, as are special mounting brackets. • **Vacuum Cleaner Corp. of America**, Cordomatic Div., 17th & Indiana Avenue, Philadelphia 32, Pa.

▲ For more details circle NED-248 M on enclosed inquiry slip ▲

from Cake Mixes to Crude Oil...



Processes That Need Metering Need Pulsafeeder

Our Pulsafeeder can handle an almost unlimited variety of jobs. It's used in everything from adding flavor to cake mixes to treating crude oil as it comes from wells. Whatever the job, Microflo has no peer in accurate metering and trouble-free pumping.

Thousands of Pulsafeeder metering pumps are serving laboratory, pilot plant and industrial operations. Applications include odorization, sampling, addition, metering, treating and filling.

- No stuffing box means no leakage or contamination.
- Oil submersion protects parts from corrosion and wear.
- Sealed hydraulic system for trouble-free operation.
- Rate adjustable manually or automatically when operating or idle . . . from a few drops to 15.7 GPM . . . pressures up to 7000 psig.

Write for complete specifications contained in Catalog 59
Lapp Insulator Co. Inc., Process Equipment Division, 1812 Poplar St., LeRoy, N. Y.

Lapp PULSAFEEDER
METERING PUMP

▲ For more details circle NED-245 M on enclosed inquiry slip ▲

SOUTHWEST "Monoball" SELF-ALIGNING BEARINGS

CHARACTERISTICS ANALYSIS	RECOMMENDED USE
1 Stainless Steel Ball and Race	For types operating under high temperature (800-1200 degrees F.).
2 Chrome Alloy Steel Ball and Race	For types operating under high radial ultimate loads (3000-893,000 lbs.).
3 Bronze Race and Chrome Steel Ball	For types operating under normal loads with minimum friction requirements.
4 "Dyflon"® Plastic Alloy Inserts. CRES Ball and Race. Chrome Alloy Steels.	For types operating under rotational, high radial loads and long cycle life where lubrication is impossible.

Thousands in use. Backed by years of service life. Wide variety of Plain Types in bore sizes 3/16" to 6" Dia. Our engineers welcome an opportunity of studying individual requirements and prescribing a type or types which will serve under your demanding conditions. Southwest can design special types to fit individual specifications. Write for Engineering Manual No. 551. Address Dept. NED-60

SOUTHWEST PRODUCTS CO.
1705 SO. MOUNTAIN AVE., MONROVIA, CALIFORNIA

▲ For more details circle NED-249 M on enclosed inquiry slip ▲

YOU SAVE MORE OF THESE BY USING THESE

*Fluteless (non-cutting) taps for cold forming threads in soft metal such as aluminum, zinc, copper, brass, leaded steels, etc.

MOHAWK STANDARD SUBLAND DRILLS

• If you are now using the popular new fluteless (non-cutting) tapping principle for softer metals, you can further improve and simplify your tapping operations through the use of Mohawk Standard Drill-Chamfer sublands. Mohawk drill-chamfer "standards" will simultaneously drill and chamfer clean, concentric holes that will speed your basic tapping operation, eliminate breakage and scrap, reduce your drilling tool inventories, eliminate jig and fixture movement.

Examine your drilling and tapping costs, then see for yourself how many places a Mohawk "standard" could easily improve the job and reduce your costs.

Available from Stock—
Mohawk "standards" are immediately available in all practical sizes, types and combinations in choice of 3 step lengths and 3 shank styles.

Subland Drill-Chamfer for Regular Taps Fluteless Taps Pipe Taps Heli-Coil* Taps

Subland Drill Counterbore for Socket Head Cap Screws

Subland Drill-Drill for Tap Drill and Body Clearance

*REG. U. S. PAT. OFF.

Write Today! . . . for your copy of the big, new catalog of Mohawk Standard Subland Drills.

Mohawk TOOLS, Inc.
Montpelier, Ohio

▲ For more details circle NED-250 M on enclosed inquiry slip ▲

Something much finer in a dial thermometer: finer because it is the bourdon tube type of thermometer at its best...embodies the greater precision and lasting accuracy of the Marsh Pressure Gauge.

Both vapor tension and gas-filled types are available in either distant reading or rigid stem types. In the broad Marsh line you have a complete selection of temperature ranges, case sizes, styles, and finishes.

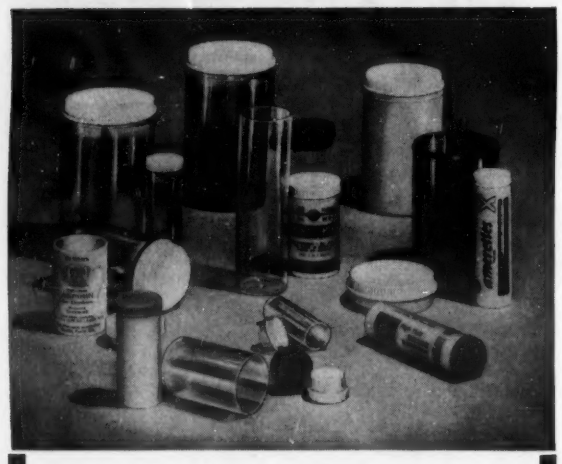
Ask for the Thermometer Catalog

MARSH

MARSH INSTRUMENT COMPANY, Dept. 26, Skokie, Ill.
Division of Colorado Oil and Gas Corporation
Marsh Instrument & Valve Co., (Canada) Ltd.
8307 103rd St., Edmonton, Alberta, Canada
Houston Branch Plant, 1121 Rothwell St.
Sect. 15, Houston, Texas

▲ For more details circle NED-251 M on enclosed inquiry slip ▲

LERMER PLASTIC CONTAINERS



Exceptional printing makes the difference...

Helps make the sale!

- Printed or decorated up to 4 colors on crystal clear, transparent or opaque colors
- Largest line of RIGID plastic containers
- 1/5 the weight of glass—greatly reducing ever-increasing shipping and handling costs
- Lightweight and shatterproof—with rigid wall protection
- Economical—with customer re-use value
- Also made of new high density polyethylene—Poly-Opal*. Are chemically inert, stain resistant and have lower permeability to moisture and gases than conventional polyethylene.

*T. M.

Write for full-color catalog, samples and prices.

LERMER PLASTICS, INC.
514 South Avenue
Garwood, New Jersey
PIONEERS AND SPECIALISTS IN PLASTIC CONTAINERS SINCE 1919

▲ For more details circle NED-252 M on enclosed inquiry slip ▲

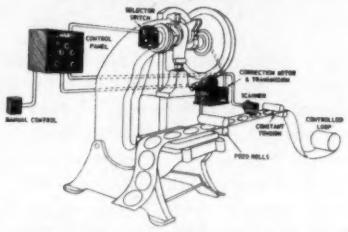
WIRELESS PAGING SYSTEM
sending station activates buzz, light

Important messages to key personnel in plants and warehouses are speedily delivered by the Tele-Tracer wireless paging system. A centrally located signal-sending station accommodates 9 to 360 receivers, carried in the breast pocket of the recipient. A button at the sending station activates a gentle buzz or blinking light at the selected receiver. By placing the receiver to his ear, the user hears the verbal message in privacy. Receivers are powered by miniature accumulators which are automatically recharged at night. ● **Standard Research Consultants, Inc.**, 345 Hudson St., New York 14, N. Y.

▲ For more details circle NED-253 M on enclosed inquiry slip ▲

REGISTER CONTROLS
for web processing equipment

Both electronic and mechanical components comprise packaged one and two-way register controls for web processing equipment. Controls are applicable in sheeting, folding, box-making, metal stamping, punching, printing, bag making, die-cutting, perforating, and wrapping operations involving paper, plastic, film, board, foil, and metal materials. They detect and interpret any registration error, flash a signal through a control panel which in turn activates a corrective transmission unit. A complete package consists of photoelectric scanning head, selector switch that calculates required corrections, a correction motor to move the corrective devices, a control panel, and various correction transmission units. ● **Machine-O-Matic, Inc.**, 717 Chicago Ave., Evanston, Ill.



▲ For more details circle NED-254 M on enclosed inquiry slip ▲

WALL WASHING MACHINE
25-lb unit for one or two-man use

One man can easily clean 6000 sq-ft of wall area in one day with the improved Wall Deterger, a detergent-type wall washing machine. Two men can operate from the machine for twice the volume of work. The highly mobile unit weighs only 25 lb and supplies a detergent which requires only washing and buffing. Detergent will not streak or harm paint and sanitizes without odor. It seals paint with a transparent film to prevent dirt penetration, and assures a good base for repainting. ● **Von Schrader Mfg. Co.**, 16th Street & Junction Avenue, Racine, Wis.

▲ For more details circle NED-255 M on enclosed inquiry slip ▲

MOBILE SUMP FILTER PUMP
handles 50 to 600 gph of solution

Leakproof, self-priming, and troublefree, this mobile sump filter system can be quickly wheeled to any location. It consists of a compact sump pump, filter, and hose mounted on a stainless steel cart with two 8-in. rubber tired wheels. It will handle from 50 to 600 gph of solution from tanks from 1 ft below floor level to 4 ft above. Typical uses include filtering lots of precious metal salts by a refinery, with complete recovery in every case, and filtering plating solutions. ● **Sethco Mfg. Co.**, 2284 Babylon Turnpike, Merrick, L. I., N. Y.

▲ For more details circle NED-256 M on enclosed inquiry slip ▲

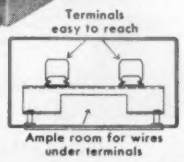
NEW

J.I.C. Terminal Box

OIL-TIGHT DUST-TIGHT

Complete with Terminal Blocks (or brackets only)

Designed for faster, easier wiring



Famous trade-approved Hoffman JIC box is now available with new time-saving mounting brackets for terminal blocks that leave plenty of space for wires . . . and make wiring easy wherever conduit connections are located.

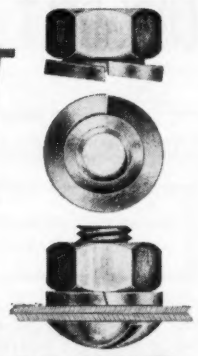
Equipped with medium duty, sectionalized terminal blocks; or with brackets only—you mount your own terminals. Blocks mount on steel straps. Additional straps may be added at a later date if more circuits are needed.

Boxes are completely oil and dust tight with JIC screw clamps to close gasketed covers. Standard box sizes range from 8"x6"x3½" to 16"x14"x6" offering 16 to 64 terminals. Similar terminal system also available in large NEMA-12 enclosures.

Hoffman ENGINEERING CORPORATION
Dept. NED-161, Anoka, Minnesota

▲ For more details circle NED-257 M on enclosed inquiry slip ▲

new



EATON-RELIANCE

FASTITE NUTS

The best answer yet devised to keep tension in bolted assemblies is the Fastite nut developed by Eaton-Reliance. The Fastite assembly is a combination nut and helical spring washer, permanently held together, but free to rotate when pressure is applied. The helical spring washer provides a much greater reactive range and tension than other types of washers.

Write in for a comparative-tension graph.

EATON RELIANCE DIVISION
MANUFACTURING COMPANY
509 CHARLES AVENUE • MASSILLON, OHIO

SALES OFFICES: NEW YORK • CLEVELAND • DETROIT
CHICAGO • ST. LOUIS • SAN FRANCISCO • LOS ANGELES

▲ For more details circle NED-258 M on enclosed inquiry slip ▲

YOUR GOOD PRODUCT DESERVES TO BE SHIPPED with THE PROPER MARK

MARKING RULE 6 says: freight must be stenciled or otherwise durably and plainly marked.

DURABLY means in a durable manner; lasting in spite of hard wear or frequent use. (You get durability with D-B ROL-IT-ON stencil inks.)

PLAINLY means easy to read. The marking should be as large as possible. (There is a D-B stencil machine in a letter size to meet your every marking need.)

FOR FURTHER INFORMATION WRITE...

DIAGRAPH-BRADLEY INDUSTRIES Inc.
P. O. BOX 269 HERRIN, ILLINOIS
DISTRIBUTORS IN ALL PRINCIPAL CITIES

▲ For more details circle NED-259 M on enclosed inquiry slip ▲

LYON® FILING CABINETS

Quality Design All the Way

- **Easy rolling drawers** glide on six ball bearing and two floating rollers for smooth operation.
- **Double stops**—prevent drawers from being pulled out and spilled accidentally.
- **Drawers stay closed**—no rebound when drawers are slammed or when cabinet is used on uneven floors.
- **Drawers easily removed**—just open wide and lift. No catches to unlatch. Back of drawer has hand grip.
- **Rounded corners** on drawers and cross rails match the beauty of attractive, modern handles and label-holders. Cabinet finish, gray baked-on enamel.

Write for free 92-page Lyon Steel Equipment Catalog.

LYON METAL PRODUCTS, INC.
General Offices: 122 Monroe Ave., Aurora, Illinois
Factories in Aurora, Ill.—York, Pa.—Los Angeles
Dealers and Branches in All Principal Cities

▲ For more details circle NED-260 M on enclosed inquiry slip ▲

HydroLectric

HEAVY DUTY PLATFORM TRUCK

handles loads up to 20,000 lbs.

- An extremely high capacity rating for a hand motorized truck.
- Adequate power and wheel capacity — still easy to steer
- Economical way to handle the unusual, the bulky and the very heavy load.

A TRUCK FOR EVERY PURPOSE AND MATERIAL

LIFT TRUCKS, INC.
CINCINNATI 14, OHIO

▲ For more details circle NED-261 M on enclosed inquiry slip ▲

LYON® TOOL TOTERS

Dozens of uses for these sturdy steel toters—in toolrooms, stockrooms, on assembly lines. 18" wide, 24" deep, 34½" high.

Built-in drawers operate in closed case for extra strength and permanent alignment. Both drawers can be padlocked at once. Easy-rolling swivel casters. Finished in durable gray baked-on enamel.

Write for free 92-page Lyon Steel Equipment Catalog.

LYON METAL PRODUCTS, INC.
General Offices: 122 Monroe Ave., Aurora, Illinois
Factories in Aurora, Ill.—York, Pa.—Los Angeles
Dealers and Branches in All Principal Cities

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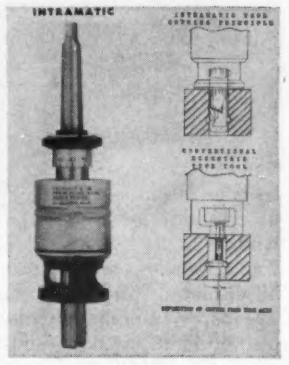
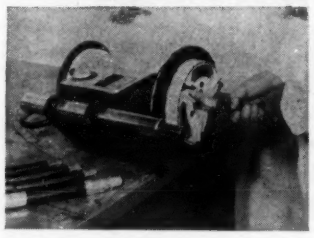
INTERNAL RECESSING TOOL
rigid cutter support assured



Internal recessing operations heretofore considered impractical are performed automatically with the Intramatic tool. It has wide face, multiple form, and deep grooving capabilities. Tool will back spotface to a diameter of two times the hole diameter. Design assures rigid cutter support. Basic Model JA accommodates holes from ¼ to 2-in., whereas a larger model serves capacities to 6-in. diameter. • **Nobur Mfg. Co.,** 6860 Farmdale Ave., North Hollywood, Calif.

▲ For more details circle NED-263 M on enclosed inquiry slip ▲

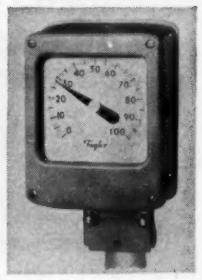
HOSE ASSEMBLY MACHINE
quickly joins hose with reusable ends



Assemblies of hose and reusable ends of any style or size up to 3 in. hex are quickly made by Model T-1500 hose assembly machine. It grips work securely in both right and left directions. Unit also has a universal centering rear chuck, a telescoping arm for driving a wrench in the assembly operation, and an extra long outlet cord. It is powered by ½-hp 115-v ac motor. Machine can be secured to a hinged tripod mounting stand or to a bench vise. • **Weatherhead Co.,** 128 W. Washington Blvd., Ft. Wayne, Ind.

▲ For more details circle NED-264 M on enclosed inquiry slip ▲

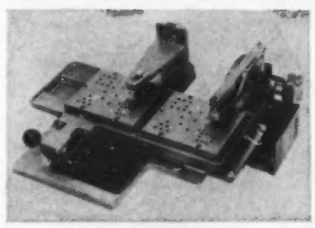
PNEUMATIC TRANSMITTERS
accurate within 1 per cent of value



Optional servo power unit to maintain transmission accuracy under load is feature of low-cost 210T and 211T Transcope pneumatic transmitters. They provide input-to-output accuracy within ½ per cent in measurement of gage pressure, volumetric pressure, temperature, and volumetric load. Low friction in sealed indicator-driving mechanism permits 0.1 per cent input-span sensitivity to low energy input signals. The 11¾-in. scale is readable at 35 ft and indicates to within 1 per cent of actual value of variable measured. Units operate on process air and are either surface or pipe mounted. Model 211T is nonindicating. Resin-finished aluminum housing withstands severe exposure. • **Taylor Instrument Cos.,** 95 Ames St., Rochester 1, N. Y.

▲ For more details circle NED-265 M on enclosed inquiry slip ▲

POSITIONING TABLE
template guided unit positions work on drill press to within ±0.0005 in.



Ball bearing mounting of the Burgmaster positioning table affords rapid positioning of work on drill presses, accurate within ±0.0005 in. The unit has a 4 x 5-in. table working area and is particularly effective when used in conjunction with manually-operated Model 1C and bench Model 0 six-spindle turret drilling machines with ½ and ¼-in. capacities, respectively, and with the automatic bench turret drill with power fed ¼-in. capacity.

Table is locked in position by an air-operated shot pin which drops into a hole in the master template. This template has the hole pattern of the part to be produced and when mounted, is in register with the work-holding subplate and locating template. Subplate provides tool clearance for drilled-through holes. Locating template, mounted under handle pointer, shows operator the relative position of the table. • **Burgmaster Corp.,** 15001 S. Figueroa St., Gardena, Calif.

▲ For more details circle NED-266 M on enclosed inquiry slip ▲

LYON® WORK BENCHES

HEAVY-DUTY STEEL TOP

Here are lifetime steel benches that thrive on hard usage. Tops won't crack, splinter, gouge or become oil soaked. Accessory equipment includes shelves, back and end stops, drawers, shelf risers and electrical outlet strips. Gray baked-on enamel finish. Also available—hardwood tops and pressed wood over steel tops.

Write for free 92-page Lyon Steel Equipment Catalog.

LYON METAL PRODUCTS, INC.
General Offices: 122 Monroe Ave., Aurora, Illinois
Factories in Aurora, Ill.—York, Pa.—Los Angeles
Dealers and Branches in All Principal Cities

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LepeL

HIGH FREQUENCY INDUCTION

HEATING EQUIPMENT

for Hardening • Annealing • Soldering
Brazing • Zone Refining • Crystal Growing

ELECTRONIC TUBE GENERATORS:
1 kw; 2½ kw; 5 kw; 10 kw; 20 kw; 30 kw; 50 kw; 75 kw; 100 kw.

SPARK GAP CONVERTERS:
2 kw; 4 kw; 7½ kw; 15 kw; 30 kw.

WRITE FOR THE NEW LEPEL CATALOG 36 illustrated pages of valuable information.

LepeL HIGH FREQUENCY LABORATORIES, INC.
55th ST. & 37th AVE., WOODSIDE 77, N. Y.

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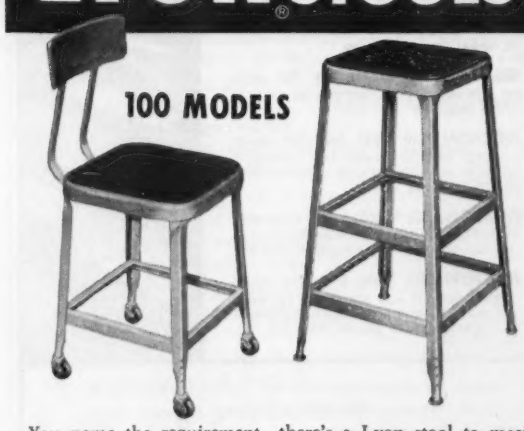
LYON® STEEL STOOLS

100 MODELS



You name the requirement—there's a Lyon stool to meet it. With or without backs—ventilated steel or pressed wood seats—glide, swivel caster or rubber-cushioned feet. Adjustable legs if desired. All stools built of heavy-duty steel, all-welded construction. Finished in gray baked-on enamel.

Write for free 92-page Lyon Steel Equipment Catalog

LYON METAL PRODUCTS, INC.
General Offices: 122 Monroe Ave., Aurora, Illinois
Factories in Aurora, Ill.—York, Pa.—Los Angeles
Dealers and Branches in All Principal Cities

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EDMONT CASE NO. 671: Handling steel for truck bodies, expensive leather gloves lasted 20 shifts. Edmont recommended No. 62W Grab-it gloves, *Extra*coated with cut-resistant rubber, which cost less and wore 25 shifts, reducing glove costs 54%.

Extracoated glove cut costs 54%

In the case above, the *job-fitted* glove reduced costs from 8¢ per man-shift to 3.8¢. The Grab-it glove's rough surfaced coating is superior to leather in cut and snag resistance, cushions against shock and provides unequalled non-slip grip for safer handling.

Free Test Offer to Listed Firms: Tell us your operation. From more than 50 types, we will recommend correct *Extra*coated gloves and send samples for on-the-job testing.

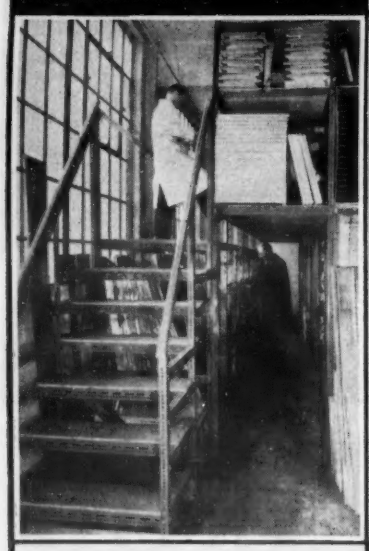
Edmont Inc., 1240 Walnut Street, Coshocton, Ohio — In Canada, write Edmont Canada Ltd., Cowansville, Quebec.

Edmont JOB-FITTED GLOVES

▲ For more details circle NED-270 M on enclosed inquiry slip ▲

There's no limit to what you can do with

DEXION the first and greatest name in **SLOTTED ANGLES**



- PALLET RACKING
- CONVEYORS
- FRAMEWORK
- WORK BENCHES
- TABLES
- STORAGE RACKS
- PARTITIONS
- DISPLAY STANDS
- MEZZANINES
- MAINTENANCE PLATFORMS
- MACHINE GUARDS
- DOLLIES
- SHELVING
- CHUTES
- STAIRWAYS
- CATWALKS
- SPECIAL EQUIPMENT

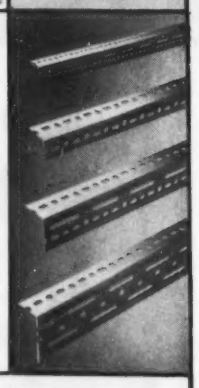
on all-purpose range of 4 SIZES in steel or aluminum

DEXION 112 Midget Size The angle for jobs where great load-bearing capacity is not required.

DEXION 140 Light Duty The equal-flanged DEXION angle for light-duty purposes. For use alone, or combined with DEXION 225 and 300.

DEXION 225 Standard The all-purpose DEXION angle. Combines with DEXION 140 and 300 to solve every equipment problem.

DEXION 300 Heavy Duty The super-rugged angle for use wherever great loads or accidental shock loads must be provided for. Combines with DEXION 225 and 140.



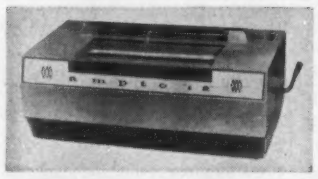
Choose the slotted angle with the world-wide reputation for greatest strength, soundest engineering and most durable finish. Only DEXION offers you a choice of 4 sizes, in both steel and aluminum. Only DEXION offers you such a wide range of useful accessories. Only DEXION gives you the quality that provides truly lower cost.

Write for name of your nearest distributor

DEXION INC. 39-25, 62nd STREET, WOODSIDE 77, N.Y.

▲ For more details circle NED-271 M on enclosed inquiry slip ▲

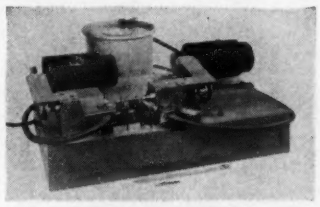
PHOTOCOPIER makes 12-in. wide copies



Small engineering drawings, maps, ledger and journal sheets, correspondence, and reports can be duplicated by the Ampto 12 photocopier, a diffusion transfer machine. Specialized uses include preparation of positives for offset platemaking, intermediates for whiteprint and blueprint equipment, visual projection transparencies, and transferring to diffusion transfer offset plates. Machine has a built-in dispenser for negative paper, automated solution control, and dial control of light intensity settings. It can be used with any type of diffusion transfer papers, films, and in the single-sheet copying systems under ordinary office lighting or diffused daylight conditions. Price is $259.50. ● **Ampto, Inc.**, Hicks Avenue, Newton, N. J.

▲ For more details circle NED-272 M on enclosed inquiry slip ▲

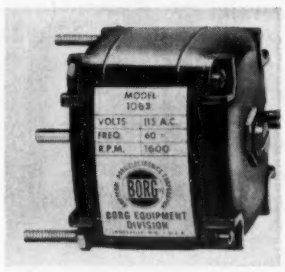
CENTER LAPPING MACHINE handles parts up to 8 in. long



Standard as well as recessed center holes 1/16 in. and larger are precision lapped in both ends of workpieces up to 8 in. long by this small-center lapping machine. Two 10,000-rpm motors with reversing switches drive opposing spindles. One spindle is mounted on ball ways to permit a gentle lapping motion. Work is held in two adjustable V's so that center holes can be offset in relation to the diamond lap to create a semigrinding operation and rotate the parts. Mist coolant system is used. ● **J & S Tool Co.**, 87 Dorsa Ave., Livingston, N. J.

▲ For more details circle NED-273 M on enclosed inquiry slip ▲

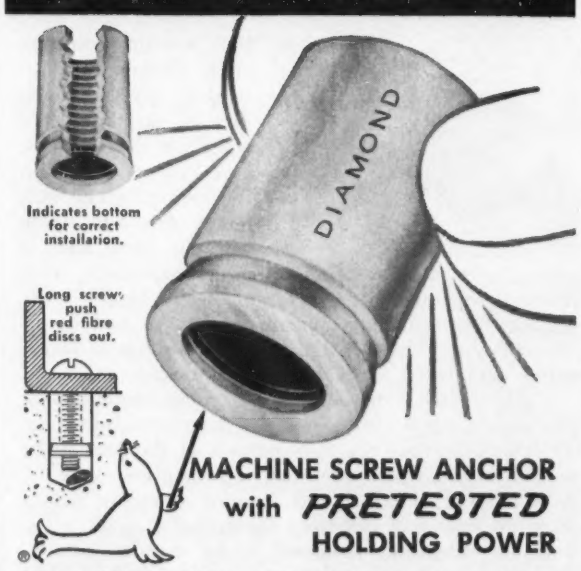
SUBFRACTIONAL-HP MOTORS for critical instrument applications



Ample safety margins for critical instrument applications are provided by the 1060 Series low-inertia subfractional-hp motor. Units operate on 115-v 60-cycle single-phase current at no-load speed of 1600 rpm. Basic Designs 1063 and 1065 respectively have 12 and 14-w inputs at stall, 2700 and 400-ohm dc resistance each winding at stall, and effective resistances of 5500 and 2800 ohms each winding at stall. Gear trains are optional. ● **Amphenol-Borg Electronics Corp.**, Borg Equipment Div., 120 S. Main St., Janesville, Wis.

▲ For more details circle NED-274 M on enclosed inquiry slip ▲

NEW... Red Seal® DISC KEEPS DIRT OUT of THREADS



MACHINE SCREW ANCHOR with *PRETESTED* HOLDING POWER

Now available in 10-24 and ¼"-20 sizes. Samples on request.

DIAMOND EXPANSION BOLT CO., INC. Garwood, New Jersey

▲ For more details circle NED-275 M on enclosed inquiry slip ▲

FULL CONE—HOLLOW CONE—FLAT SPRAY

Spraco has the most complete line of nozzles available anywhere — **IN STOCK.** Capacities range from ⅛ pint/min. to 4000 gal./min. Bronze, cast iron, and stainless steel. Write for our nozzle catalog.

SPRAY ENGINEERING CO., *106 Cambridge St., Burlington, Mass.*

▲ For more details circle NED-276 M on enclosed inquiry slip ▲

On any drive there are five vibration danger points—motor, bearings, clutch, sheaves and v-belts. One, the vibration from v-belts, can be eliminated by a simple switch to Veelos. An easy-to-make test with the Veelos Vibration Analyzer measures one belt against another. It will prove to you that Veelos cuts v-belt vibration up to 89% more than any other type of v-belt.

Ask your distributor—or write direct—to have a Veelos salesman demonstrate how vibration-free Veelos v-belts on your drives will bring higher production, higher quality output with less wear on bearings and machines.

SEND FOR your free copy of the Veelos Data Book

VEELOS THE BALANCED LINK V-BELT

MANHEIM Manufacturing & Belting Company Manheim 4, Penna.

Veelos is known as Veelink outside U.S.A.

▲ For more details circle NED-277 M on enclosed inquiry slip ▲

Whatever You Need in WIRE SHAPES and FORMS ...ask SOMMER!

Ask Sommer first for whatever you need in precision wire parts or products. We have complete equipment to handle your job from start to finish.

We offer finest facilities for automatic fabrication, flattening and punching, threading, spot and butt welding.

Finishes include baked enamel, cadmium, brite zinc, brite nickel, nickel chrome and mill finishes —in both barrel and fully automatic equipment.

We make our own tools, saving time and money for you.

Tell us your needs. Send sample, blueprint or drawing. We will submit recommendations and quotations promptly.

SOMMER
METALCRAFT CORPORATION
200 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

▲ For more details circle NED-278 M on enclosed inquiry slip ▲

FREE SAMPLE OFFER

MARK METAL OR ANY MATERIAL!
with the All New...
FLASHDRY INK MARKER
never dries up when left uncapped

*exclusive Wet-Wick, Valve Action**

*It's a brand-new concept . . . it's the ALL-NEW FLASHDRY INK MARKER that's always ready for use. Just push down and Presto! The ink is flowing again . . . no matter how long the cap has been off!

- Writes on any surface, including metal
- Contains more ink than other markers at higher prices!
- 8 brilliant colors
- Guaranteed 2-miles of writing
- Can't evaporate, completely leakproof
- 2 Miles of Marking
- Replaceable tips and inks mean greater economy

Available at all leading Dealers. 4 sizes from **39¢** up.

FOR FREE SAMPLE write:

FLASH MANUFACTURING COMPANY
169 MURRAY STREET, NEWARK 5, N. J.

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FOCUS ON MYSTIK BRAND® TAPES

Take your problems to tape headquarters . . . Mystik. Here, in our full line of self-stik Mystik Brand Tapes and specialties, you'll find *color* tapes that code, identify, decorate . . . *waterproof* tapes that seal and protect . . . *super strength* tapes that perform heavy duty banding operations . . . *hi-low temperature* tapes that withstand the most severe conditions. For full information, write:

MYSTIK® SELF-STIK

Mystik Adhesive Products, Inc.
4234 West Drummond Place, Chicago 39, Ill.

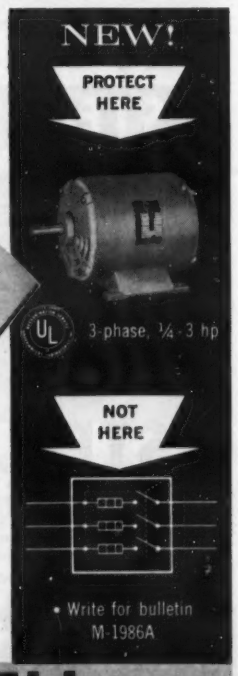
▲ For more details circle NED-280 M on enclosed inquiry slip ▲

STOP 3-phase motor burnouts with INHERENT PROTECTED

OPEN MOTORS

NEW!

PROTECT HERE



• Write for bulletin M-1986A

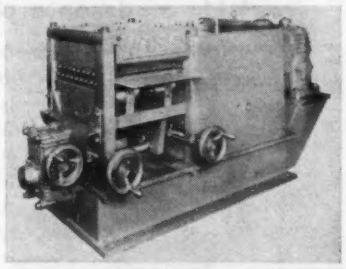
Motor protection is built-in, tested, U/L *approved*. Self-protected against conditions that up to now have caused 3-phase open motor failures.

Cuts costs because machinery down-time is prevented, overload current relays and 3-pole magnetic contactors may be eliminated. As easy to install as ordinary motors. A product of *Kingston-Conley, Inc., Plainfield, N.J.* . . . A Howell subsidiary A-2854A

HOWELL *electric motors company*
Offices in principal cities . . . see **YELLOW PAGES**

▲ For more details circle NED-281 M on enclosed inquiry slip ▲

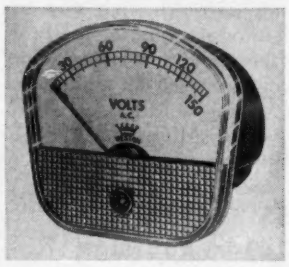
STAMPED PARTS FLATTENER
can be hand or automatically fed



Stamped parts are straightened rapidly and automatically by this parts flattener. Finished parts are within 0.002 to 0.003 in. of dead flatness. Machine uses a series of small diameter work rolls supported by multiple back-up bearings to work the parts to relieve stresses and thus obtain almost dead flatness in one pass. Parts can be fed by hand or automatically as they come from production machines. Sizes are available to suit all needs. • **Voss Engineering Co.**, 7301 Penn Ave., Pittsburgh 8, Pa.

▲ For more details circle NED-282 M on enclosed inquiry slip ▲

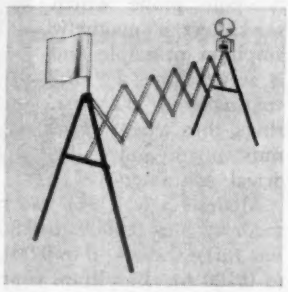
PANEL METERS
accurate to 2 per cent of scale



Plastic cover and molded Bakelite base contribute to low cost of Model 1724 alternating-current panel meter which is enclosed in a Crown-profiled case. Top and sides of cover are clear. The voltmeter is adjusted for use on 25 to 125 cycles, but can be used on up to 2500 cycles for a nominal surcharge. Nine ranges cover 0-5 to 0-500 v. Five ammeter models range from 0-1 through 0-10 amps, whereas four milliammeter ranges span 0-15 through 0-500 ma. A single small external bulb provides adequate illumination for unit mounted behind a panel. • **Daystrom, Inc.**, Weston Instruments Div., 614 Frelinghuysen Ave., Newark 12, N. J.

▲ For more details circle NED-283 M on enclosed inquiry slip ▲

FOLDING STEEL BARRICADE
12 in. wide, extends to 8-ft width



Only 12 in. wide when retracted, this folding steel barricade opens to an 8-ft width. Legs are made of steel tubing, and the cross members are reinforced channel finished in traffic yellow with glass bead reflectorization. Unit stands 30 in. high and weighs 20 lb. It is furnished with two red fluorescent danger flags, with flashers optional. Units extensible to 6 and 4 ft are also available. • **Albert W. Pendergast Safety Equipment Co.**, Tulip & Longshore Streets, Philadelphia 35, Pa.

▲ For more details circle NED-284 M on enclosed inquiry slip ▲

Name your job!
Here is your
GENERATOR

¼—15 kva, a.c.
¼—3 kw, d.c.

• Send for Bulletin 700 (A, B.)

If you need electric power at special places or for special purposes . . . a.c. or d.c.; standard or special voltages, amps, frequencies, speeds; motor-, engine- or belt-driven . . . call Howell! A product of *The Leland Ohio Electric Company, Dayton, Ohio* . . . A Howell subsidiary. A-2856A

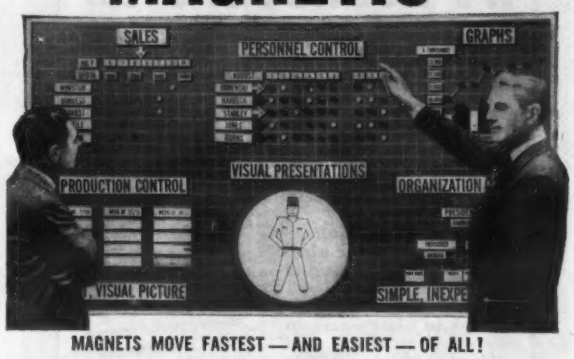
USES LIKE THESE

- *Emergency* Hospitals, Homes, Utilities, Stores
- *Operational* Tools, Saws
- *Special Power* D.C. or A.C., Special frequencies, Laboratory testing, Processes, Refrigerator cars, trucks

HOWELL *electric motors company*
Offices in principal cities . . . see **YELLOW PAGES**

▲ For more details circle NED-285 M on enclosed inquiry slip ▲

VISUAL **MAGNETIC** CONTROL



MAGNETS MOVE FASTEST — AND EASIEST — OF ALL!

SIMPLEST VISUAL SYSTEM FOR
- Production
- Personnel
- Sales
- Maintenance
- Scheduling
- Machine Loading
- Charts—Graphs
- Visual Presentations

COLORFUL MAGNETIC ELEMENTS
- show facts instantly
- organize for action
- eliminate mistakes
- get the job done

PRICED FROM **$38** INCLUDING MAGNETIC ELEMENTS

PRICE LIST & BROCHURE NE12 **FREE** ON REQUEST

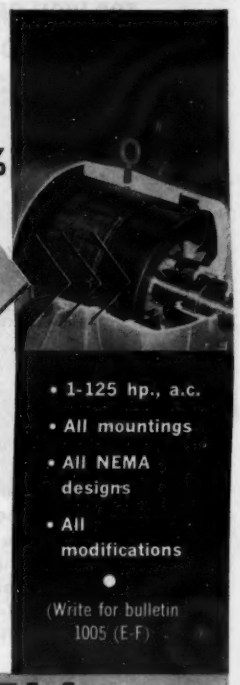
REPRESENTATION DESIRED IN SOME AREAS

Methods Research Corp.
105 Willow Ave., Staten Island 5, New York

▲ For more details circle NED-286 M on enclosed inquiry slip ▲

Service factors:
UP 15 to 25%
Your motor costs:
DOWN 10 to 35%
. . . open motors with

"HOWELLSEAL"
encapsulated windings



New *Howellseal*-protected open motors now do most jobs you've had to buy TEFC motors to do . . . with higher service factors, lower motor costs.

Howellseal encapsulation protects windings and leads against these conditions that are standard-open-motor killers: *Heat*—open motor ventilation with enclosed motor protection; *Chemicals*—acids, salt, alkali, caustics, gases; *Abrasives*—carbon black, graphitic dusts, fine dirt and grit; *Moisture*—condensate, spray, splash. *Howell Electric Motors Company, Howell, Michigan.* A-2853A

- 1-125 hp., a.c.
- All mountings
- All NEMA designs
- All modifications

(Write for bulletin 1005 (E-F)

HOWELL *electric motors company*
Offices in principal cities . . . see **YELLOW PAGES**

▲ For more details circle NED-287 M on enclosed inquiry slip ▲

• *fourth of a series*

WHAT YOUR HOWELL MAN
represents and has to offer

Greetings, again, from the "New Howell" . . . a report to the thousands of customers and other friends who have helped us grow.

Our *corporate* and *product* "Images" have changed vastly in the past few years.

Howell now also offers you the combined broad motor lines of: *The Ohio Electric Mfg. Company; Kingston-Conley, Inc.; The Leland Ohio Electric Co.*

Each is a leader in certain important areas. Each is known for certain outstanding products. Each has built on ideas, initiative, integrity.

Consolidation is now completed. *People, Plants, Products* of four formerly separate enterprises are now ONE COMPANY . . . dedicated to continued high standards of service to American Industry.

A few words about our:

craftsmanship

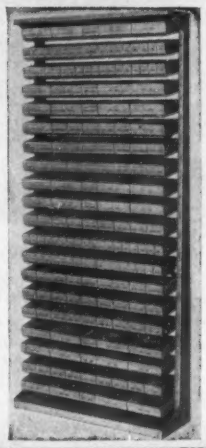
Howell quality has been a tradition since 1915. Only high-grade materials are used. Closest attention is paid to smallest details. Tests are exacting. Rigid quality-controls. Above all Howell products are made by *fine craftsmen.* A-2923A

HOWELL *electric motors company*
SUBSIDIARIES:
OHIO ELECTRIC MFG. COMPANY • LELAND OHIO ELECTRIC COMPANY • KINGSTON-CONLEY, INC.

▲ For more details circle NED-288 M on enclosed inquiry slip ▲

it's BORROUGHS for
small parts BINS

WATCH



your small parts storage problems disappear when you install Borroughs "Handee Andee" Small Parts Bins. Everything's always in place—easy to see—easy to reach. And "Handee Andee" Bins take a minimum of floor space. Three heights—32", 56", 84". Each model will hold 4 different sizes of slip-on, slip-off Bin Boxes in any arrangement you desire. Send for catalog today.

BORROUGHS MANUFACTURING COMPANY
OF KALAMAZOO
A SUBSIDIARY OF THE AMERICAN METAL PRODUCTS COMPANY OF DETROIT
3072 NORTH BURDICK ST. amp KALAMAZOO, MICHIGAN

For more details circle NED-289 M on enclosed inquiry slip

PRESENTATION PROJECTOR uses transparencies which are quickly made on a photocopier

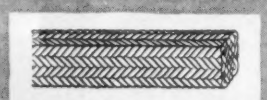
A 10 x 10-ft image of any original document is projected on a screen from a distance of 15 ft by the Thermo-Fax overhead projector, suited for sales presentations or employee training sessions. Projection transparencies are 8½ x 11-in. plastic sheets, available in positive, negative, or color form, and made on any existing Thermo-Fax dry process copying machine. Originals may be opaque, transparent, or translucent, and printed on one or both sides.

The projector, with its 1000-w lamp and blower in its base, operates on 110 v and permits screening in a fully lighted room. It stands 25¾ in. high and its base is 13¼ x 21½ in. Operator standing at the projector can use a pencil to point out features on the transparency, the pencil being projected as a shadow. Price is $395. • **Minnesota Mining & Mfg. Co.,** Dept. SO-409, 900 Bush St., St. Paul 6, Minn.

For more details circle NED-292 M on enclosed inquiry slip

FOR HIGH OR LOW SPEED ROTARY OR RECIPROCATING MOTION . . .

PALMETTO®
Interwoven
Asbestos
Packings

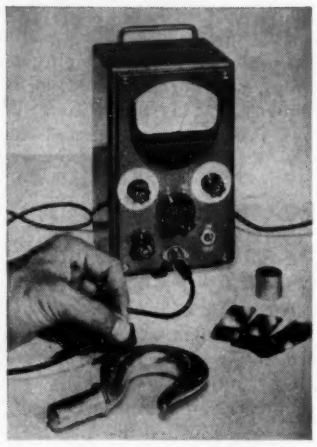


• For the ultimate in durable packing construction choose from the nine *interwoven* packings in the Palmetto Self-Lubricating Packing line . . . Combines density of braid over braid—flexibility of plaited. Send for your copy of SLP-659 that gives service conditions, applications, prices, etc

GREENE, TWEED & CO.
NORTH WALES, PA.

For more details circle NED-290 M on enclosed inquiry slip

COATING THICKNESS TESTER measures 0 to 0.100-in. coatings on iron and steel accurately



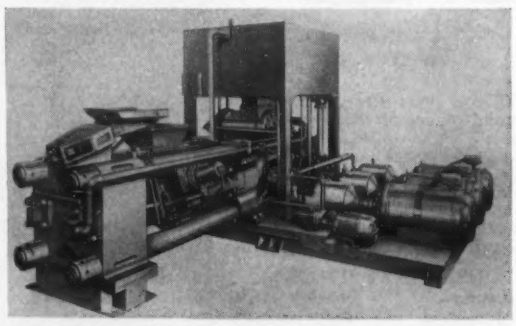
Thickness of organic and nonmagnetic metal coatings on iron and steel, including phosphate, are nondestructively and accurately measured with the Type ES Permascope. The compact, portable, 110-v ac unit has a two-pole probe which works on a magnetic amplifier principle and is suited for gaging coatings on piston rings, thin wire, screws, nuts, pipes, and cylindrical containers.

Model ES le 2 J4a has two scales with ranges of 0 to 0.001 and 0.0008 to 0.0010 in. Model ES le 3 J4a has three scales— 0 to 0.001, 0.0008 to 0.010, and 0.008 to 0.100 in. Beryllium copper foils of known thickness are furnished for calibration. Also available are four probes with pole distances of 5/32, ½, ⅝, and 1 in. for measuring thicknesses up to ¾ in., plus a special attachment for applying probe at constant pressure to soft materials. • **Twin City Testing Corp.,** 533 S. Niagara St., Tonawanda, N. Y.

For more details circle NED-293 M on enclosed inquiry slip

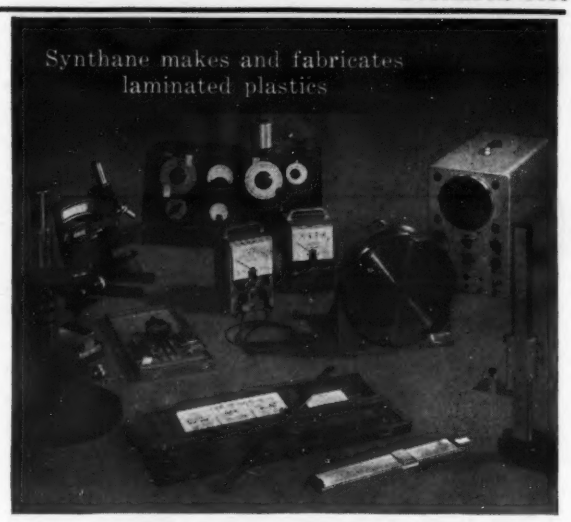
AUTOMATIC BRIQUETTING PRESS converts 9 tons of scrap per hour

This fully automatic Model AL-1000 briquetting press is powered by three 125-hp electric motors and converts up to 9 tons of machine tool scrap per hour into



cylindrical briquettes. Briquettes weigh from 30 to 40 lb each and have a density of 80 per cent. They are classified as high grade scrap and suitable for direct charging into furnace or cupola. Press has cast steel cylinder pressure plates and die holders, hardened and ground chrome nickel steel piston rods, and an enclosed electrical system. Moving parts are lubricated by the pressurized operating fluid. • **SPO, Inc.,** Milwaukee Foundry Equipment Div., 6470 W. Bruce St., Milwaukee 46, Wis.

For more details circle NED-294 M on enclosed inquiry slip



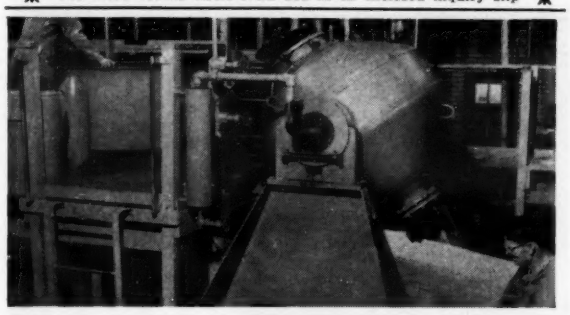
Quality is Precision and People and Pride

Our customers prefer us to machine the laminated plastics they buy from us rather than do it themselves. One of the many reasons why is Quality.

We have all the machines, standard and special, for achieving quality and all the gauges for checking accuracy. We also have people whose workmanship makes final inspection practically unnecessary. Write for "Laminated Plastic Parts—Make or Buy?"

SYNTHANE CORPORATION
N.E. RIVER ROAD, OAKS, PENNA.
Sheets • Rods • Tubes • Fabricated Parts
Molded-laminated • Molded-macerated
SYNTHANE

For more details circle NED-295 M on enclosed inquiry slip



Glasteel Dryer Blender for corrosive or sticky materials

The glass on the interior of this Pfaudler® Dryer Blender is the key to efficient processing.

You can handle all acids (except HF) and most alkalies *without* corrosion. You are sure that product purity is maintained, because the glass is essentially *inert*.

And the fire-polished glass surface minimizes product sticking—insuring higher heat transfer, and quick complete clean-up.

Tumbling action produces homogeneous blending and thorough, rapid drying.

You save on materials handling, since you charge products directly into the Dryer Blender and discharge into packaging containers *without* intermediate steps.

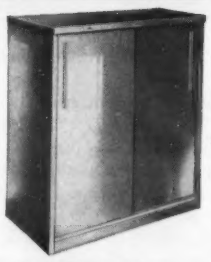
There are four production models, with working capacities ranging from 2.6 to 165 cubic feet, as well as a ⅓-cubic-foot lab model for test purposes.

FREE BULLETIN 963. For your copy, write to our Pfaudler Division, Dept. NED-120, Rochester 3, New York.

PFAUDLER PERMUTIT INC.
Specialists in FLUIDICS . . . the science of fluid processes

For more details circle NED-296 M on enclosed inquiry slip

it's BORROUGHS for
STEEL CABINETS



New
Sliding-Door Models
3 heights—29", 42", 78"
Styled by Dietrich

YOUR first glance at Borroughs' new sliding-door cabinets will sell you completely. Long, vertical door pulls slide doors open or closed with finger-tip ease, on quiet nylon rollers. Door pulls and dust-free tracks are anodized aluminum, with butler-type finish.

Send for catalog.

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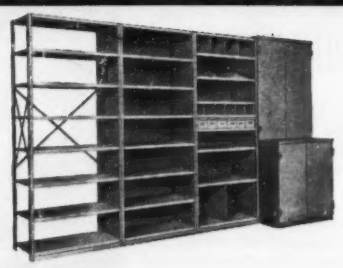
OF KALAMAZOO
A SUBSIDIARY OF THE AMERICAN METAL PRODUCTS COMPANY OF DETROIT
3072 NORTH BURDICK ST. amp KALAMAZOO, MICHIGAN

For more details circle NED-291 M on enclosed inquiry slip

it's BORROUGHS for
STEEL SHELVING



STEP up your storage efficiency and economy with the most simple, most flexible, most rapidly assembled shelving on the market. It's rigid and rugged. No special tools needed to assemble. Shelves adjustable without nuts or bolts. Every unit is complete in itself.

Send for catalog.

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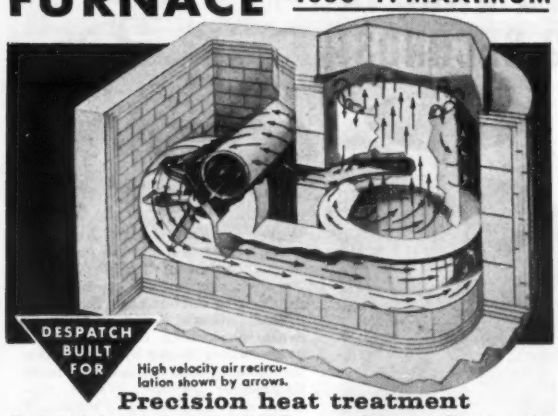
For more details circle NED-297 M on enclosed inquiry slip

Modern Pot Type FURNACE 1350° F. MAXIMUM



Precision heat treatment

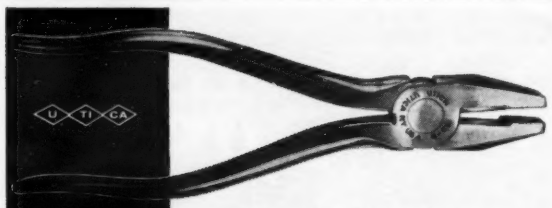
Despatch forced air convection Pot-type furnaces allow temperature control ± ½° F. max. They are available to 1350° F. max. with basket diameters from 19" to 60". All kinds of gases at various pressures and standard line electric power are used for heating. Compact design saves valuable plant area. *Despatch has been serving American industry for 58 years.*

WRITE TODAY for free bulletin 206-1DJ, Pot-type furnaces.

DESPATCH OVEN CO.

DESPATCH OVEN CO. 619 S.E. 8th St., Minneapolis 14, Minn.

▲ For more details circle NED-298 M on enclosed inquiry slip ▲



UTICA

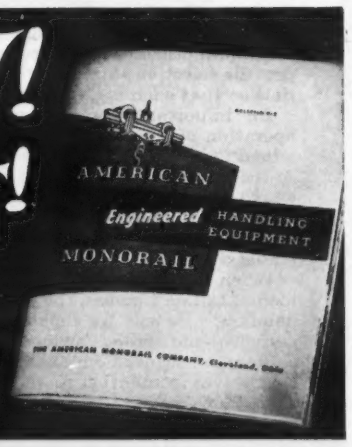
Our specialty is pliers! Keeping pace with the changing demands of industry, Utica produces and stocks over 1,000 different types of pliers—fine precision tools for every conceivable use. Because of the job we have been able to do in many of the country's largest and most specialized plants, we believe that Utica tools can help you, too—either reduce your costs or improve your products. Contact your Utica distributor, today.

Utica Drop Forge & Tool Division, Kelsey-Hayes Company, Utica 4, N. Y.

tools the experts use!

▲ For more details circle NED-299 M on enclosed inquiry slip ▲

NEW! FREE!



• 56 PAGES
• 99 PHOTOS
—all workable, profitable ideas!

NEW idea book on Monorail handling systems for...

FACTORIES • FOUNDRIES • LAUNDRIES • PACKERS • PAPER MILLS • TEXTILE MILLS • AUTO PLANTS • WAREHOUSES • OTHERS

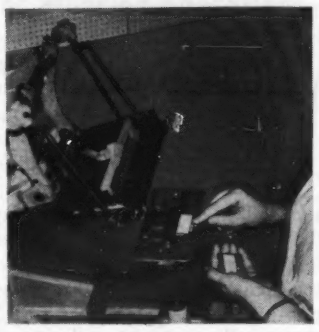
SEND TODAY!

Order this 56-page booklet on this magazine's inquiry form or write direct to us requesting Bulletin C-2.

AMERICAN MONORAIL 1116 E. 200th STREET CLEVELAND 17, OHIO

▲ For more details circle NED-300 M on enclosed inquiry slip ▲

LABEL PRINTER
makes up to 60 labels per minute



Gummed, ungummed, heat seal, paper, plastic, or fabric labels and tags are imprinted at speeds up to 60 per minute by the 45AG label printer. Imprints can be any size up to 6 9/16 x 2 7/16 in. Imprint data is easily changed by inserting new type blocks into the appropriate slots of the Masterplate printing element. A range of ink colors is available. • **Markem Machine Co.**, Keene 70, N. H.

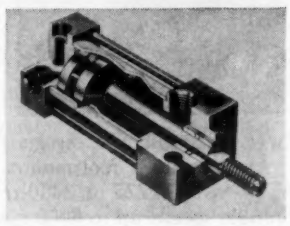
▲ For more details circle NED-301 M on enclosed inquiry slip ▲

REVOLVING FILE
can be expanded up to six tiers

Thousands of correspondence or reference file jackets are made readily accessible to a seated file clerk with Speedline Work Organizer rotary horizontal files. Clerical cost savings of 35 to 50 per cent are reported because of the design of the Rotor-Tier drawer. Folders of records are filed radially around the hub which is balanced for finger-tip rotation. Additional tiers can be mounted on single 48 x 42-in. base up to six high, giving a capacity of 24 full size file drawers. Multiples of these modular assemblies can be used with illustrated mobile filing desk. • **Wassell Organization Inc.**, 225 State St. W., Westport, Conn.

▲ For more details circle NED-302 M on enclosed inquiry slip ▲

MIDGET AIR CYLINDER
for limited space use, rated 200 psi



Square head Series S Midget-Air cylinder rated to 200 psi is small enough to hold in the palm of your hand. Double-acting models are offered in ¾, 1, and 1⅛-in. bore sizes with standard strokes to 12 in. Spring-return models are also available. Four basic mountings are standard, with clevis and flange attachments optional. One-piece piston and stainless piston rod are brazed together to prevent loosening. Cylinder has O-ring seals, although special seals are obtainable for temperatures over 165° F. • **Hannifin Co.**, Dept. 128, 501 S. Wolf Rd., Des Plaines, Ill.

▲ For more details circle NED-303 M on enclosed inquiry slip ▲

OFFSET DUPLICATOR
table top model for office use

Line work, halftones, and solids are reproduced in jet black or colors by the Model 320 table-top offset duplicator. It can be used for systems paperwork, letterheads, ruled forms, catalog pages, price lists, advertising literature, and bulletins. Compact office-size unit has an image area of 9½ x 13 in. and duplicates on impression paper ranging in size from 3 x 5 in. to 11½ x 16 in. The easy-to-use machine has a virtually jamproof automatic feed system, an adjustable feed table for various sizes of paper, and Aquamatic moistening control for uniform copy clarity. Self-adjusting cylinders allow switching from lightweight paper to card stock, and from light paper masters to heavy metal plates. Speed is up to 7800 copies per hour. • **A. B. Dick Co.**, 5700 W. Touhy Ave., Chicago 48, Ill.

▲ For more details circle NED-304 M on enclosed inquiry slip ▲

SERVICE FOR YOUR B&D TOOLS

Check the Yellow Pages under "Tools-Electric" for the location of the nearest Black & Decker factory service branch or authorized service station.

Free tool inspection when requested • Genuine B&D parts used • Factory-trained technicians • Standard B&D Guarantee at completion of recommended repairs • Fast service, reasonable cost, always.

Or write for address of nearest of more than 50 branches and service stations to: THE BLACK & DECKER MFG. CO., Dept. 1912-S, Towson 4, Md.

Black & Decker

QUALITY TOOL SERVICE

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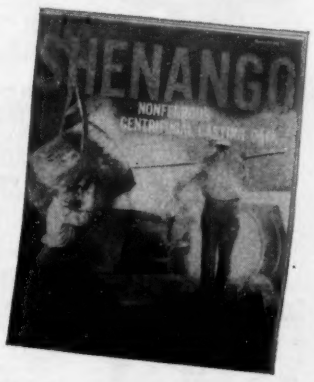
HERE'S A HELPFUL AND CONVENIENT REFERENCE SOURCE

for comparative specifications, chemical analyses minimum physical properties... clearly charted in SHENANGO'S NEW BULLETIN NO. 157



This invaluable chart of nonferrous alloys centrifugally cast by Shenango is readily available upon request. For your free copy, write to this publication or the Centrifugally Cast Products Division, The Shenango Furnace Company, Dover, Ohio

SHENANGO CENTRIFUGAL CASTINGS

COPPER, TIN, LEAD, ZINC BRONZES • ALUMINUM AND MANGANESE BRONZES • MONEL METAL • NI-RESIST • MEEHANITE METAL • ALLOY IRONS • DUCTILE IRON

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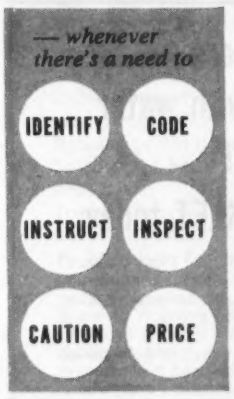

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They'll do it faster, better, more economically—and *without moistening*. Easy, simple to apply, either by hand or with new Avery automatic Labeler. Labels can be applied in exacting register on flat, rounded, concave or irregular surfaces. Ideal for special applications—specific labeling problems. Speeds from 40 to 200 labels per minute. Avery self-adhesive Labels are profitable to use—use them in *your* business.

always ask for AVERY LABELS—*what a difference they make*

☐ Please send further information on AVERY LABELING.

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★ Have you seen Avery's new pressure-sensitive Metallics for decorative trim, panels and identification plates?

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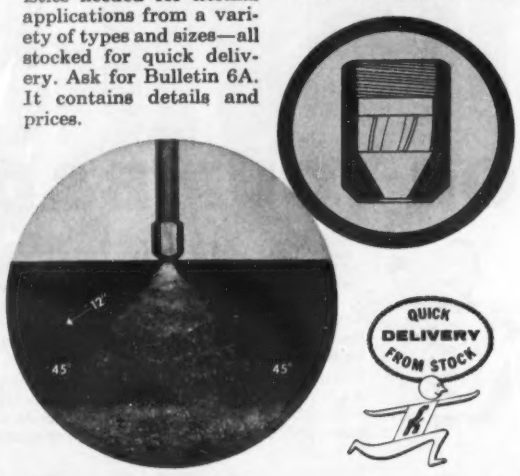
SK offers a complete line of spray nozzles for process operations or for use as product components. You can get any capacity, any spray characteristics needed for normal applications from a variety of types and sizes—all stocked for quick delivery. Ask for Bulletin 6A. It contains details and prices.

SPRAY NOZZLES

various types, sizes



Schutte and Koerting COMPANY
2227 STATE ROAD, CORNWELLS HEIGHTS, BUCKS COUNTY, PA.
Phone: MErcury 9-0900 TWX: Cornwells, Pa., 69-"U"
JET APPARATUS • ROTAMETERS • GEAR PUMPS • VALVES • HEAT EXCHANGERS
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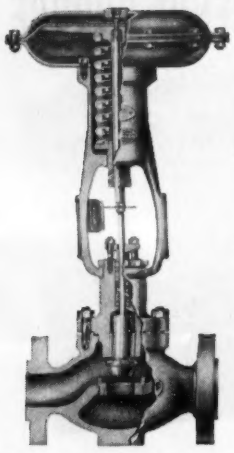
New 20000 Series
Single Seat Control Valve



With the introduction of this new line of solid-cast control valves the advantages of single seat design become available for a substantially wider scope of application, from the simple to the most severe. Consider these premium features built in as standard, available to you at no extra cost.

- **HIGH CAPACITY**
  Top guiding, unrestricted seat ring area, body and plug contours provide greater capacity than most top-and-bottom-guided double seated valves of comparable sizes.
- **HIGH PRESSURES AND PRESSURE DROPS**
  High capacity is attained with minimum seat ring areas, resulting in less unbalance force, permitting higher pressure drops.
- **WIDE SELECTION OF REDUCED CAPACITY TRIM**
  For those applications where velocity due to high drop is a consideration (or where future requirements for larger capacity are a factor) a wide selection of reduced capacity trim is available —and interchangeable in comparable valve sizes and ratings.

SPECIFICATIONS
Sizes: ¾", 1", 1½", 2", 3", 4", 6", 8", 10"
Ratings: Steel — 150, 300, 400, 600, 900, 1500, 2500 lb. ASA
Iron — Class 125 or 250 ASA
Connections: Screwed ends — ¾"-2" in 600 lb. and Class 250 rating.
Flanged — ¾"-10". Welding ends available on steel valves.
Face-to-face dimension is I.S.A. standard.

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Division of Worthington Corporation
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Condensers choked with scale or slime? Pipes clogged? Coils heavy with deposits? Whether it's air-conditioning or refrigeration systems, boilers or heating systems, "Virginia" can help you solve the problem of water treatment. Get your copy of "Water Cooling Problems —How to Correct Them." Learn what new chemicals are available, how easily they can be used, how effective they are. They are stocked by wholesalers everywhere. Or ask to have a trained "Virginia" man call on you to discuss your problem.

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141 Jefferson St., West Norfolk, Va.
☐ Send me a copy of "Water Cooling Problems—How to Correct Them."
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Company_____
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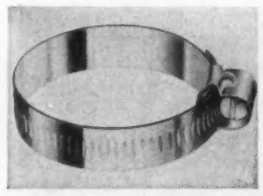
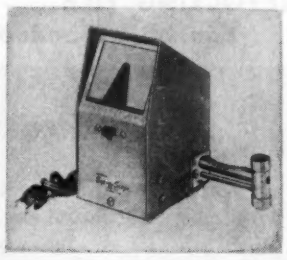
HOSE CLAMP
steel screw engages coined threads



Steel screw of this worm-drive Marman hose clamp engages on coined threads rather than perforations through the band. This avoids possible extrusion or scuffing of rubber, yet assures uniform clamping pressure. The unusual band take-up is directed away from the fastening side of the housing to eliminate interference during assembly. Screw is encased in the housing. Clamp is offered in a range of sizes and choice of materials. • **Aeroquip Corp.**, Marman Div., 11214 Exposition Blvd., Los Angeles 64, Calif.

▲ For more details circle NED-311 M on enclosed inquiry slip ▲

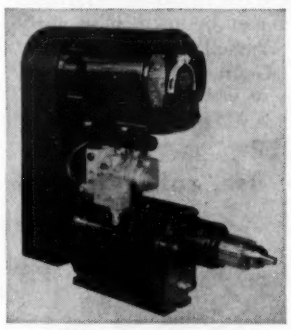
OPTICAL INSPECTION DEVICE
for examining small parts and tools



Images of points and tips of very small parts and tools with diameter under 1/32 in. are magnified and reflected on the illuminated screen of the Model SG-66 Syl-A-Scope. Flaws and wear are easily seen. Part or tool is placed in the aperture on a plate extended from the side near the lamp housing. Screen measures 2⅝ x 2¼ in. Operation is on 110-120 v ac. • **Robins Industries Corp.**, 36-27 Prince, Flushing 54, N. Y.

▲ For more details circle NED-312 M on enclosed inquiry slip ▲

AUTOMATIC DRILLING UNIT
with ½-in. capacity in cast iron, features centerline quill thrust

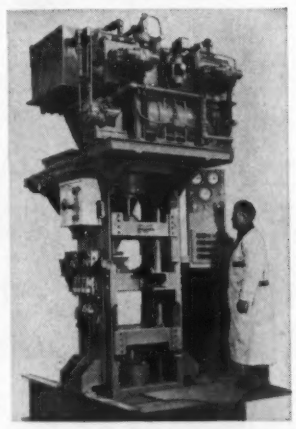


Holes up to ½-in. diameter can be drilled in cast iron by Model 300 automatic drill which develops thrust of three times air pressure and has a 3-in. stroke. Both air-powered thrust and hydraulic counter-thrust are applied along centerline of quill, eliminating deflection. Unit has rapid approach and infinite adjustment for 2¾ in. of the stroke.

Any standard foot-mount motor can be used, with ¼ to ¾-hp, 1725 or 3450-rpm motors being standard. Spindle speeds up to 8000 rpm are obtainable on standard units, with up to 15,000 rpm possible on specials. Spindle has a Jacobs E taper which accepts chucks, collet chucks, and sleeve adapters. Over-all length without chuck is 15¾ in. and width is 4½ in. Basic model sells for $295 and is available with a full line of attachments. • **Govro-Nelson Co.**, 1931 Antoinette St., Detroit 8, Mich.

▲ For more details circle NED-313 M on enclosed inquiry slip ▲

COMPACTING PRESS
opposed ram unit is self-contained, has 100-ton adjustable capacity

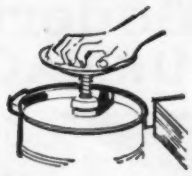


Compacting or briquetting of refractory materials, abrasives, and powder metals is function of this vertical, self-contained, opposed ram compacting press. The 100-ton maximum capacity of the automatic cycling hydraulic unit is adjustable. The 30-hp pumping unit, valving, and oil tank are located on top of the press. Jogging, set-up, and automatic cycling controls are grouped on a convenient panel.

Loading of material is done automatically as part of the press cycle. Press has 10-in. diameter hole in stationary platen; 10-in. top ram stroke; 6-in. bottom ram stroke; and 16 in. of daylight, top ram to platen. Speed is five pieces per minute of 1½-in. thick parts with 2:1 compression ratio. • **K. R. Wilson, Inc.**, Arcade, N. Y.

▲ For more details circle NED-314 M on enclosed inquiry slip ▲

APPLIES SOLVENT TO SWAB IN 2 SECONDS!!



saves time
saves solvent
reduces fire hazard

Workers can moisten cloth or swab with one hand by depressing spring mounted dasher, which pumps a measured quantity of liquid into dasher cap. Releasing dasher allows excess liquid to drain back into can to reduce evaporation losses and minimize the toxicity and fire hazards from flammable vapors. Waste motions are eliminated. Perforated metal fire baffle protects can contents from fire and explosion. Built for production-line use. Available in 5 sizes with dashers from 1" to 7" diameter. Factory Mutual Approved.

Write for Protectoseal Catalog—contains many time, labor-saving ideas for handling flammable solvents. No obligation.

THE PROTECTOSEAL COMPANY
1964 South Western Avenue Chicago 8, Illinois
IN CANADA: SAFETY SUPPLY COMPANY, TORONTO
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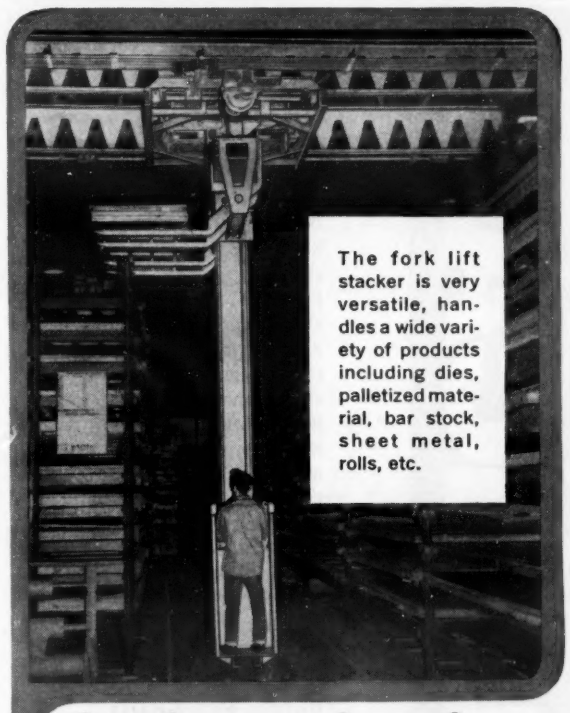

Cut Costs...Save Space

Louden stacks higher with safety

Operational in the narrowest aisles, Louden Stackers conserve floor space making possible maximum utilization of storage area. And, they provide selective storage for a variety of materials so that each is immediately available.

An important design feature insures safe operation of Louden Stackers at all times. As a load approaches the upper limit, it is closest to the frame from which it is suspended. Thus, where the stacking height becomes hazardous for conventional floor operated equipment, the entire Louden Stacker assembly is at its most stable condition.

When you have material handling requirements, call on Louden, the pioneer of overhead handling. Benefit by Louden's unequaled experience and broad array of service-proven equipment. Most Louden installations pay for themselves in months; some have done so in a matter of weeks.

Write today for PHOTO REPORT NO. 108 . . . a variety of examples of Louden Stackers at work.

Louden MONORAIL & CRANES
THE LOUDEN MACHINERY COMPANY
1204 Court, Fairfield, Iowa
A Subsidiary of Mechanical Handling Systems Inc.
SINCE 1867 . . . THE FIRST NAME IN MATERIALS HANDLING
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Now- ONE AMMETER for both AC and DC

TONG TEST is the only ammeter of its type that measures both alternating and direct current. Get instant readings, without shutting down equipment, by merely snapping tongs around electrical conductor. Interchangeable ranges up to 1000 amperes, impossible to read wrong scale. Eight types of TONG TEST available for conductors up to 3⅞" diameter or bus bars up to 4½" x ½".

AC-DC VOLTMETER

Reads up to 600 volts, AC or DC. Convenient, accurate, compact. Model UV-1 $25.00 complete with voltage leads.

Write for Catalog ND-400

COLUMBIA ELECTRIC MFG. CO.
4525 Hamilton Ave.
CLEVELAND 14, OHIO

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Modern AIR CONVEYING for BULK MATERIALS HANDLING

SPROUT-WALDRON
PNEU-VAC

Modernize for greater savings with a Sprout-Waldron PNEU-VAC Pneumatic Materials Handling System. It draws granular, pulverized, and flaky materials by air anywhere you can run a pipe. The unit can be made to cool, to heat, to aerate, to dry.

Pneu-Vac is self-cleaning, does not produce dust, prevents infestation and product intercontamination, saves space, increases production, provides greater safety and better working conditions.

Sprout-Waldron also offers complete lines of the most advanced screw, belt, and drag conveyors . . . bucket elevators . . . and rotary vane feeders. Write for details.

Write for Bulletin 18-D.

IN/495

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— Manufacturing Engineers Since 1866 —
LOGAN STREET • MUNCY, PA.
EQUIPMENT FOR SIZE REDUCTION • MIXING & BLENDING • BULK MATERIALS HANDLING • PELLETING & CUBING • PRODUCT CLASSIFICATION

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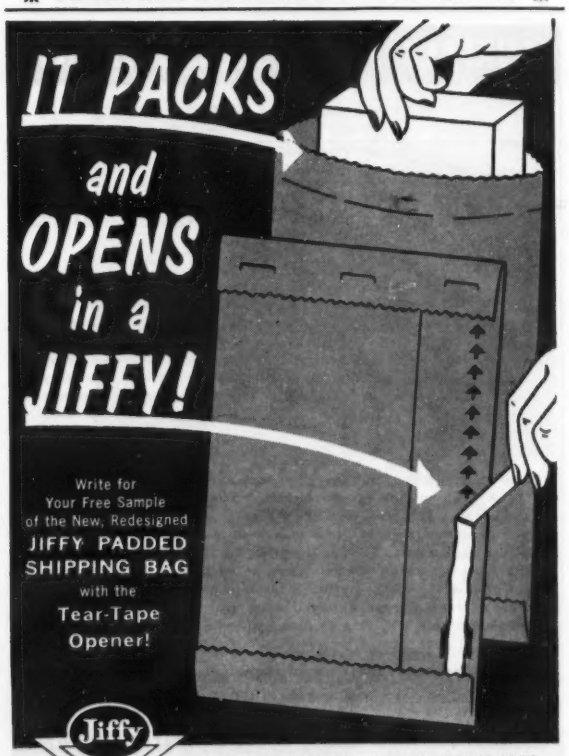
IT PACKS and OPENS in a JIFFY!



Write for Your Free Sample of the New, Redesigned JIFFY PADDED SHIPPING BAG with the Tear-Tape Opener!

Jiffy

JIFFY MANUFACTURING COMPANY
360 Florence Ave., Hillside, N. J.

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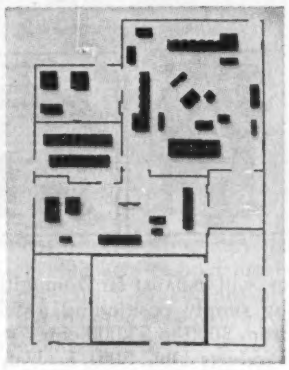
MAGNETIC LAYOUT BOARD
hangs on wall to save space in many types of planning operations

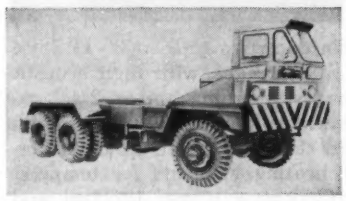


Instantly changeable magnetic two-dimensional models are used on this wall-mounting magnetic control board for planning new buildings and facilities, layout planning of printed circuits, renovation planning of offices and factories, and other uses. Gridded magnetic steel board shown holds engraved Bakelite magnetic models suited to the user's needs.

Provided with the board are Alnico magnets of various colors and sizes, magnetic card holders, magnetic supporting units for pictorial presentation, colored magnetic bars for charts and graphs, circular stickers, and straight and curved magnetic arrows. Standard board is 24 x 36 in. and grids are ¼ x 1 in. Any size board and grid can be made. Standard aluminum-framed board costs $24.50. • **Methods Research Corp.**, 105 Willow Ave., Staten Island 5, N. Y.

▲ For more details circle NED-320 M on enclosed inquiry slip ▲

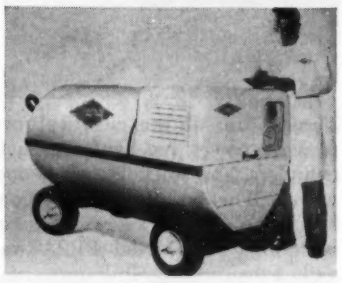
CRANE CARRIER
equipped with 220-hp engine



Air brakes on all wheels, 9:00 x 20 ten-ply tires, power steering, and a 220-hp Chevrolet V-8 engine are standard features of the Model 406 crane carrier. Designed to mount the 11-ton capacity Model T-350 Bantam crane or other equipment, it has optional center and rear outriggers. The Spicer transmission has five speeds forward and one reverse, and a ratio in low of 7.55:1. The one-man cab has an adjustable seat and safety glass. Over-all length is 283½ in. and maximum turning radius is 46 ft. • **Schield Bantam Co.**, Waverly, Iowa.

▲ For more details circle NED-321 M on enclosed inquiry slip ▲

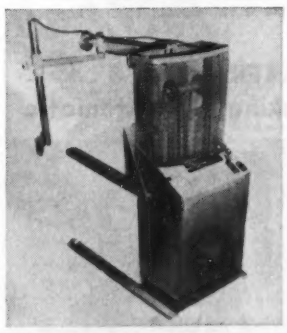
PORTABLE CO_2 TANK
has self-contained refrigeration



Liquiflow portable carbon dioxide tank unit maintains the gas at 300 psi and 0° F with its self-contained 110-v refrigeration unit. The 1000-lb capacity unit eliminates need for extensive piping or multiple fixed installations. • **General Dynamics Corp.**, Liquid Carbonic Div., 135 S. LaSalle St., Chicago 3, Ill.

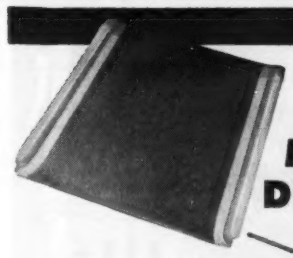
▲ For more details circle NED-322 M on enclosed inquiry slip ▲

STACKER & FEEDER
automatic unit for production use



Existing equipment is converted from hand feeding and removal of work to automatic feeding and automatic removal with the Automator. The automatic stacker and feeder is suited for such production operations as cutting, planing, sanding, shaping, finishing, and roll forming. It adjusts itself to variations in workpiece thicknesses and can be adjusted to machine height and location of work in vertical and horizontal positions. Action is synchronized with the production machine. With auxiliary devices, it can stack small short pieces on a skid; stack delicate material that must not be scratched; stack pieces of nonuniform width, length, or thickness; and feed small irregular shapes without stopping the machine for refilling. • **Machines & Mechanisms, Inc.**, Dept. M, 124 Baxter St., New York 13, N. Y.

▲ For more details circle NED-323 M on enclosed inquiry slip ▲



B&P MAGNESIUM DOCKBOARDS

—engineered by the builders of the Vanguard Earth Satellite Sphere

COMPARE THESE IMPORTANT FEATURES:

- ✓ Exclusive, rugged forged ends on one-piece curb
- ✓ Full length hand grip for safe handling from any position
- ✓ Yellow lane markings on *all* boards
- ✓ Heat treatment after welding for longer life

Compare *all* the B & P features! Write today for the fact-packed B & P Dockboard folder.

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BROOKS & PERKINS, Inc.
1928 WEST FORT STREET • DETROIT 16, MICHIGAN

AMERICA'S LARGEST MANUFACTURER OF MAGNESIUM ASSEMBLIES

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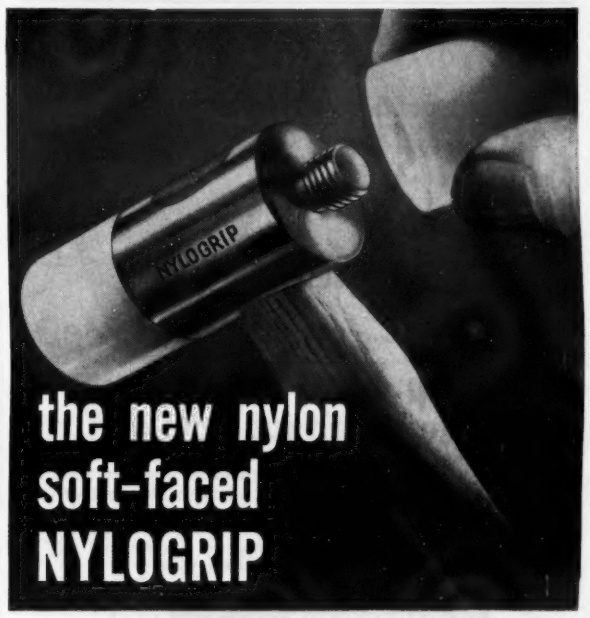

the new nylon soft-faced NYLOGRIP

HAMMER priced from.... $1.55

Compare this new, soft-faced Nylogrip hammer with any you have ever used. Check these features — then check the price.

EXCLUSIVE WITH NYLOGRIP:

Extra rugged Nylon 6 Tips — job tailored to your needs. Screw on, off in seconds. Longest-lasting tips you'll find.
Solid steel head — heft and durability where you need it.
True-balanced wood handles — just naturally feel right without extra weight or loss of safety.
A hammer for every need — no less than 6 weights, sizes!
Lower cost — price is best news of all — as low as $1.55 postpaid!

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Send checked items to:
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Quantity	Hammer Model	Weight Lbs.	Price	Replacement Tips Per Pair
	150	¼	1.55	.60
	200	½	1.70	.60
	300	¾	2.55	1.20
	400	1	2.85	1.20
	600	1½	4.20	1.65
	1000	2¼	7.10	3.70

QUANTITY DISCOUNT:
1-4 hammers...Net — 5-10 hammers...10% — 11 & over...15%
Applies to any assortment of weights.

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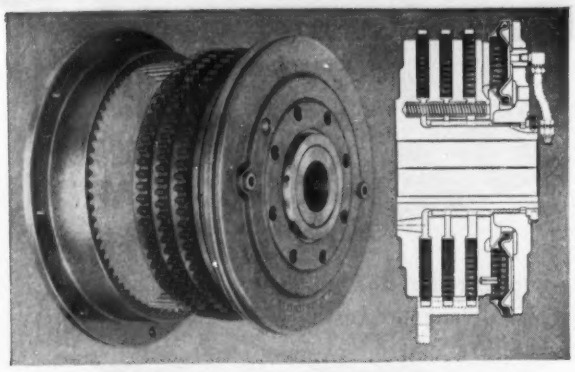


New low-cost air clutches — for *all* applications!

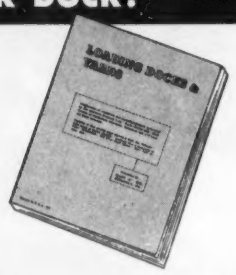
Three new Twin Disc PO Air Clutches! 8", 10", 11½" sizes! Triple-plate, double-plate or single-plate construction! Cost up to 40% less than comparable makes! Design features exclusive cartridge-type diaphragm of long-lasting neoprene reinforced with nylon . . . permits uniform contact—always . . . eliminates leakage! Self-compensating for wear . . . no adjustments required — ever! Narrow width permits replacement of band and drum clutches. Twin Disc now offers PO Air Clutches from 8" to 36", torque capacities to 126,600 lb.-ft.

TWIN DISC
Friction Clutches and Fluid Drives

TWIN DISC CLUTCH CO. • Racine, Wisconsin

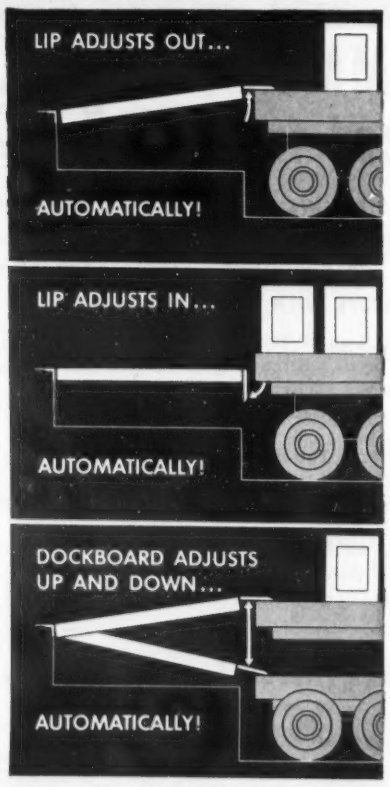
▲ For more details circle NED-326 M on enclosed inquiry slip ▲

ARE YOU PLANNING A NEW TRUCK DOCK?



KELLEY'S FREE DOCK PLANNING KIT Can Help You!

Whether you're at the blueprint or "just thinking" stage, you need Kelley's brand new reference booklet on loading dock layout. It provides important data on driveway, aisle, canopy and door requirements, dock heights, current truck-trailer dimension restrictions, etc. Also, includes complete specs on industry's No. 1 Adjustable Dockboard—Kelley's ADJUST-A-LIP. Make yours a modern, efficient and safe dock operation. Act now! Mail coupon today!



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2153 W. MILL ROAD
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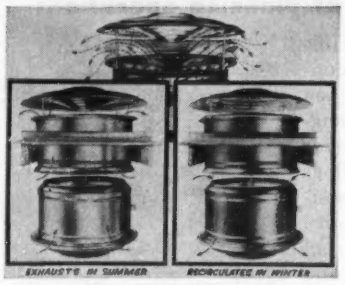
▲ For more details circle NED-327 M on enclosed inquiry slip ▲

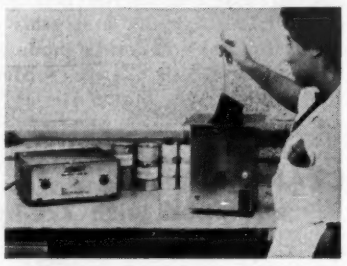
DUAL PURPOSE VENTILATOR exhausts or recirculates the air



In winter, this Genie-Air Model ER dual purpose ventilator recovers heat trapped under roof line and returns it to floor area to reduce heating costs as much as 50 per cent. The same unit, through use of the Divertco-Damper, will exhaust air from within the building in summer by simply positioning a selector switch. Sizes range from 3000 to 23,000 cfm. • **N. T. W. Corp.**, Genie-Air Products Div., 3001 E. 11th St., Los Angeles 23, Calif.

▲ For more details circle NED-328 M on enclosed inquiry slip ▲

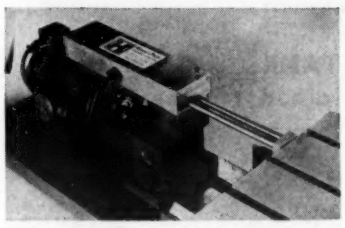
ULTRASONIC CLEANING SYSTEM 75-w generator drives tank at 25 kc



Small parts, electronic components, intricate subassemblies, dies, and similar items are production cleaned by Model LG-75 ultrasonic cleaning system. It is powered by a 75-w Sonogen generator driving a transducerized tank at 25 kc. System is available with a 1-gal tank with high acoustic output for difficult or fast cleaning and a 2-gal capacity tank for economical volume applications. Both of these welded stainless steel tanks have optional thermostatically-controlled heating elements for temperatures up to 200° F. Generator is transistorized and measures 12 x 10 x 5½ in. • **Branson Instruments, Inc.**, Branson Ultrasonic Div., 40 Brown House Rd., Stamford, Conn.

▲ For more details circle NED-329 M on enclosed inquiry slip ▲

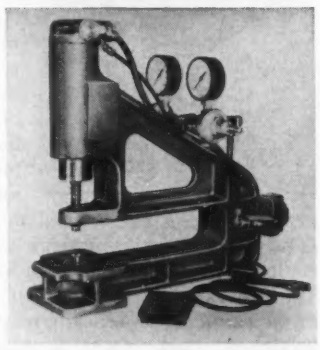
POSITIONING CONTROL for machine, valves, doors, hoppers



Automatic positioning of machine tools, valves, float levels, doors, and hopper gates at any of several predetermined positions is possible with the Hanna-Powr positioner. Typical use of the electrical-mechanical servo device is with power mechanisms, such as air or hydraulic cylinders, and solenoid valves operating a pipeline flow valve. The position selector control switch may be a few feet or miles away. A signal light indicates the position. The Model PR2A unit has two cam rods and a connecting link on one end attached to the mechanism being controlled. The other two ends trip up to 14 sets of limit switches per foot. The positioner can be up to 8 ft long. Location of stop position stations is easily changed, and positioning accuracy within ±0.005 in. is possible. • **Hanna Engineering Works**, Dept. PR-26, 1765 Elston Ave., Chicago 22, Ill.

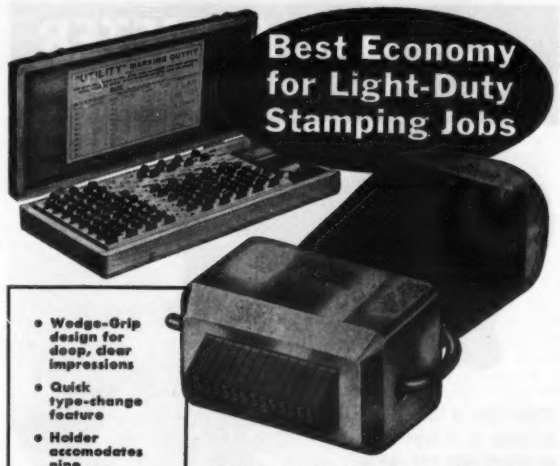
▲ For more details circle NED-330 M on enclosed inquiry slip ▲

AIR ACTUATED STAKER pressing and staking are automatic



Both hands of the operator are free to hold work with this power-holddown Presstaker which features single-cycle automatic operation and foot switch control. Air at controlled pressure drives the ram downward to hold the work or secure a press fit. When holddown pressure is reached, the air-powered staking punch descends to complete the cycle. Interchangeable holddowns and stakes for varying work can be set up in seconds. • **Cramer Controls Corp.**, Box 281, Centerbrook, Conn.

▲ For more details circle NED-331 M on enclosed inquiry slip ▲



Best Economy for Light-Duty Stamping Jobs

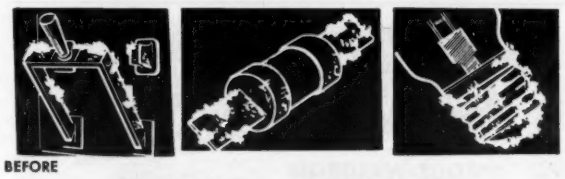
- Wedge-Grip design for deep, clear impressions
- Quick type-change feature
- Holder accomodates nine type sizes

Outfits include from 80 to 154 pieces of type—plus a holder made from non-spalling, non-mushrooming Mecco Safety steel.

Write for Bulletin UT . . . or for Instruction Sheet on use of steel stamps.

Mecco SAFETY **UTILITY MARKING OUTFIT**
A product of the Marking Device Industry
M. E. CUNNINGHAM CO.
1055 CHATEAU STREET, PITTSBURGH 33, PA.

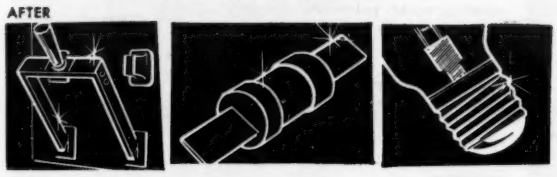
▲ For more details circle NED-332 M on enclosed inquiry slip ▲



BEFORE

SILICONE COMPOUND KEEPS CONTACTS CORROSION-FREE!

AFTER



Dow Corning SILICONE COMPOUNDS cut your upkeep chores. Just a small dab from a handy applicator tube keeps lamp bulb bases, fuse cartridge clips, switch blades and clips . . . wiping contacts on any devices . . . corrosion-free.

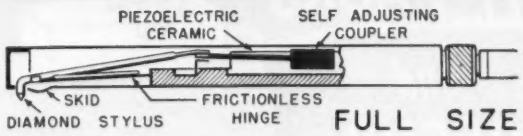
Long-life silicone compounds prevent corrosion . . . eliminate shorts, grounds and arcs . . . protect and lubricate plastics, leather, rubber and fabrics. Serviceable from —40 to 400 F!

FREE SAMPLE and information. Write today. Dept. 5812.

first in silicones
Dow Corning CORPORATION
MIDLAND, MICHIGAN

▲ For more details circle NED-333 M on enclosed inquiry slip ▲

SURFACE FINISH MEASUREMENT



PICKUP DESIGN

The heart of any surface finish measurement instrument is the pickup. This component determines the performance and versatility of the gage. The above design illustrates the most advanced pickup available. In many respects similar to a high fidelity phonograph cartridge, it employs a piezo-electric ceramic element, which is unaffected by temperature, humidity and other environmental factors. The flexing of this ceramic converts the variations in surface finish height into an electrical signal.

The self adjusting viscous coupling assures operation from a true neutral point and prevents excessive stylus pressure without critical leveling of the pickup. This feature also reduces the number of skids required. The inherent simplicity of the pickup design reduces maintenance as well as the initial cost of the equipment. The small size of the basic pickup eliminates the need for many special types or adapters. Other pickups are available which permit measurements on very small or narrow areas, flanges, thread flanks, gear teeth, small internal diameters and "O" ring grooves.

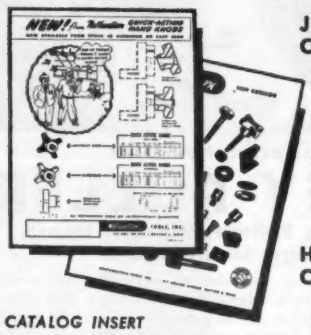
All other Roughness Meter items, amplifier, mechanical trace and skidless trace, make use of similar advanced designs.

Write for information or a demonstration.

Cleveland INSTRUMENT COMPANY
A SUBSIDIARY OF THE BENDIX CORPORATION
6220 East Schaaf Road • Cleveland 31, Ohio

▲ For more details circle NED-334 M on enclosed inquiry slip ▲

QUICK-ACTING HAND KNOBS



JIG AND FIXTURE COMPONENTS
LATCH BOLTS
CAST IRON HAND KNOBS
ALUMINUM HAND KNOBS
QUARTER TURN SCREWS
SHOULDER SCREWS
JIG FEET (3 TYPES)
SPHERICAL WASHERS
FIXTURE KEYS
KNURLED HEAD SCREWS
TOGGLE SHOE CLAMPS & V-PADS

HOLD DOWN AND CLAMPING TOOLS
T-NUT & STUD SETS
STEP BLOCK & CLAMP SETS
FLANGED NUTS
CUT THREAD STUDS
TEE NUTS
COUPLING NUTS
ADJUSTABLE STEP BLOCKS
STRAP CLAMPS (PLAIN & STEP TYPE)

CATALOG INSERT
NEW 16 PAGE CATALOG
CATALOG INCLUDES TRACING TEMPLATES

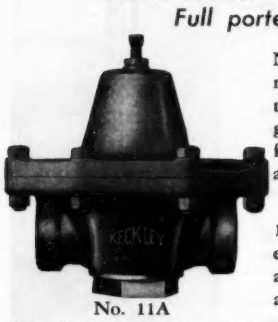
FREE! WRITE TODAY

Northwestern
127 HOLLIER AVE., DAYTON 3, OHIO

For more details circle NED-335 M on enclosed inquiry slip

MORE VALVE FOR LESS MONEY

NEW! Pressure reducing valve
Full ported orifice



No. 11A

No. 11A and No. 11R pressure reducing and relief valves feature a full ported orifice for greater capacity and increased flow of steam, air, water, oil and gas.

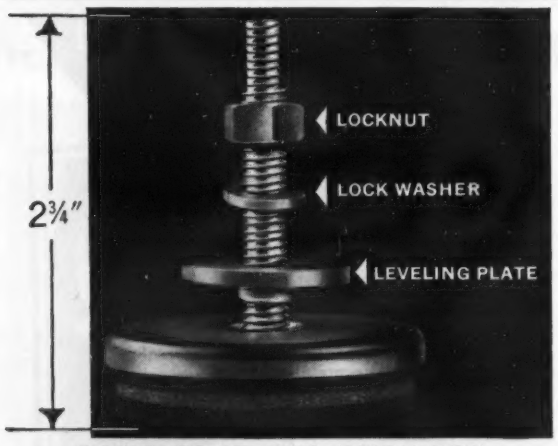
Thus the No. 11A and No. 11R fit many applications presently requiring larger ordinary and/or more expensive valves at substantial savings.

The single seated No. 11A and No. 11R have a semi-steel body, bronze or stainless steel trim and composition disc; and are suitable for initial pressures up to 250 lbs. steam, 450° F.: 500 lbs. water, oil and gas, non-shock, 100° F. Reduced pressures range from 1 lb. to 100 lbs. Sizes 3/8" to 2".

Write for Bulletin No. 60

O. C. KECKLEY COMPANY
General Offices and Factory
3400 CLEVELAND ST., SKOKIE, ILLINOIS
KECKLEY
Pressure Regulators • Temperature Regulators • Float Valves
Strainers • Solenoid Valves • Reducing Valves
Pop Safety Valves • Relief Valves

For more details circle NED-336 M on enclosed inquiry slip



LOW-COST, ALL-PURPOSE
Machine Mount
...Unisorb Level-Rite "200"

Ideal mount for light machine tools, air conditioners, business and laboratory machines, and similar equipment. Does 4 things at once . . .
- Speeds and simplifies installation, machine always mobile
- Controls vibration, protects floors, reduces noise, improves working conditions
- Improves machine performance, allows higher speeds
- Provides precise, positive leveling — free-floating screw-post compensates for uneven or pitched floors.

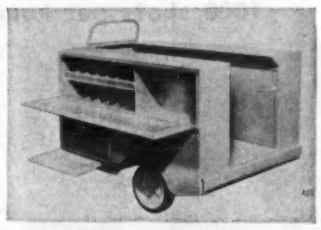
Ask for a money-back trial . . . or send for Unisorb Bulletin.

FEO-3

UNISORB 224 SOUTH STREET BOSTON 11, MASS.

For more details circle NED-337 M on enclosed inquiry slip

MOBILE WORKSHOP
carries 1000 lb on rubber tires



Tools, materials, and supplies can be taken to the job in one trip in the lockable weathertight compartments of the Shopmobile mobile workshop. Its load capacity, including side compartments and center loading space, enable it to carry 1000 lb on its roller bearing, solid rubber tired wheels. Checker plate steel workbench surfaces atop both side compartments are at comfortable working height. Brakes are applied automatically when the handle is raised to a vertical position. The Shopmobile is delivered primed, ready to paint, for $249. • **Stahl Metal Products, Inc.**, 4750 W. 160th St., Cleveland 35, Ohio.

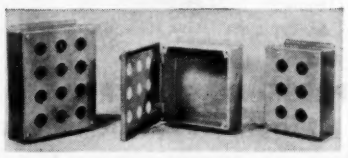
For more details circle NED-338 M on enclosed inquiry slip

MINIATURE SYNCHRO CLAMP
holds small components to any base

Easy, secure fastening of No. 5 to No. 11 miniature synchro components to any base is afforded by Mini-Synclamps. These stainless steel, miniature clamps have a nylon insert which is squeezed when screw is tightened, allowing the screw to self-align perfectly. Once aligned, the clamp locks and unlocks quickly by rotating the screw one-half turn with a screwdriver. Clamps function at up to 350° F and are available in 0.031, 0.047, 0.062, and 0.093-in. grip thicknesses. Prices start at 40 cents each. • **Timber-Top, Inc.**, 38 Brooklyn Ave., Freeport 2, L. I., N. Y.

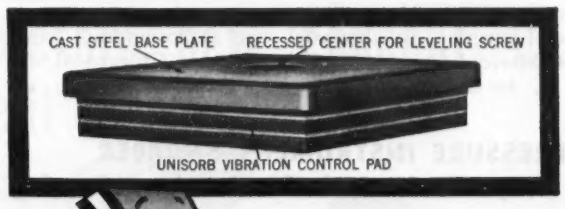
For more details circle NED-339 M on enclosed inquiry slip

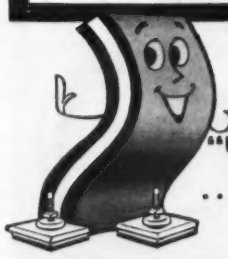
PUSHBUTTON ENCLOSURES
1 to 25-station oiltight type



Neoprene cover gasket and welded seams assure protection against the entry of oil, dirt, or weather into this line of pushbutton enclosures. They accommodate all makes of standard oiltight pushbutton pilot lights, switches, and other components. Hook-on hinges and captive cover screws are built into the enclosures, available in slim, standard, pendant, and extra deep types with 1 to 25 stations. All are made of 14-gage steel, phosphatized after fabrication, and given a baked-on gray hammertone finish. They meet JIC, NEMA, and UL standards. • **McKinstry Metal Works, Inc.**, 285 McKinstry Ave., Chicopee, Mass.

For more details circle NED-340 M on enclosed inquiry slip





NEW!
UNISORB
"UL" Machine Mount
. . . for machines with built-in Leveling Screws

The new model "UL" Unisorb Level-Rite Mount has been developed specially for use under machines with their own leveling screws.

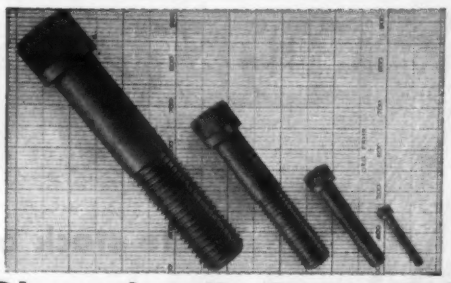
It combines Unisorb vibration control pads with a cast steel base plate having a recessed center to accept the leveling screw. The Unisorb Level-Rite "UL" eliminates all need for anchor bolts or lag screws, and machines can be moved whenever needed. The Unisorb Pad reduces transmitted vibration up to 85%, allows higher machine speeds, cuts noise and lowers building maintenance.

Unisorb Level-Rite "UL" is available in a range of sizes and loadings, and with high or super density Unisorb to meet all requirements. Send for Unisorb Bulletin or ask for Money-back trial offer.

PE O-4

UNISORB 224 SOUTH STREET BOSTON, MASS.

For more details circle NED-341 M on enclosed inquiry slip



Dimensionally Controlled Heat Treatment
gives Mac-it screws maximum holding power

End-use requirement is an important factor in determining heat treatment specifications for Mac-it alloy steel screws. While physical dimensions are a prime factor, the proper combination of strength, toughness, ductility and resistance to shock and vibration must be achieved if the correct torque-tension—or holding power—is to meet your exact requirements.

Mac-it metallurgists determine a heat treating cycle that takes into consideration material, size *and* end use. This combination-of-three results in Mac-it screws with maximum holding power.

Every step in the manufacture of Mac-it screws is followed with care by specialists who know what you want—and want you to have it. That's why Mac-its *hold tight in a tight place!*

Mac-it

NEW SPECIFICATION SHEET listing new 1960 Series Socket Screw Industry Dimension Standards. Write for your *free* copy.
Mac-it Parts Co., Dept. 24, Lancaster, Pa.

MAC-IT ALLOY STEEL SCREWS

For more details circle NED-342 M on enclosed inquiry slip

to eliminate costly bearing failure

Get Free Lubrication Survey of Your Production Equipment

At your convenience, an experienced Farval Lubrication Engineer will scientifically survey all your plant equipment. His report will tell you:
- Most economical way to lubricate each piece of equipment
- Whether your equipment can be protected by centralized lubrication
- Cost of centralized lubrication on your production machinery
- How centralized lubrication can increase bearing life, save maintenance costs, and increase production.

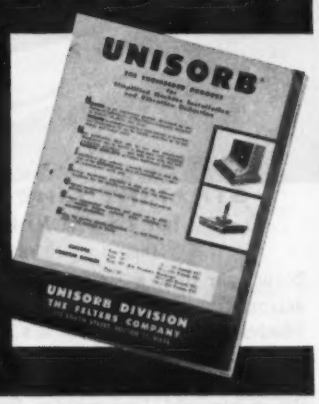
Write today for your free copy of Bulletin 26-T. It gives the cost-cutting advantages of centralized lubrication and shows how you can keep production equipment in top-operating condition, month after month—year after year.

Farval Division
Eaton Manufacturing Company
3283 East 80th Street
Cleveland 4, Ohio

For more details circle NED-343 M on enclosed inquiry slip

FREE

Bulletin Tells All About Machine Mounts!



Here's complete data on machine mounts — describes various kinds, how to use them, gives specifications.

Shows how to save up to 80% in machine installation, cut vibration, reduce noise and make machines run better and longer.

Make sure you know all about this modern method of machine mounting. Send for this Unisorb Bulletin today. No cost or obligation.

FE O-5

UNISORB Division of The Felters Co. 224 South St., Boston 11, Mass.

For more details circle NED-344 M on enclosed inquiry slip

carries a complete stock of

GAUGE GLASS and CYLINDERS

Need Gauge Glass or Cylinders in a hurry? Then write, wire or phone Swift for immediate delivery.

We have a complete stock of Pyrex Tubular Gauge Glass and Cylinders on hand for chemical, pharmaceutical or industrial applications. Supplied in any length or finish from 2 mm. O.D. to 7" O.D.

SWIFT *Glass Division*
SWIFT LUBRICATOR COMPANY, INC.
5 Glass St., Elmira, N.Y.

▲ For more details circle NED-345 M on enclosed inquiry slip ▲

NEW!

SKIL ORBIT/LINE SANDER

Does both jobs...

ORBITAL SANDING for fast sanding

STRAIGHT LINE SANDING for finest finishing

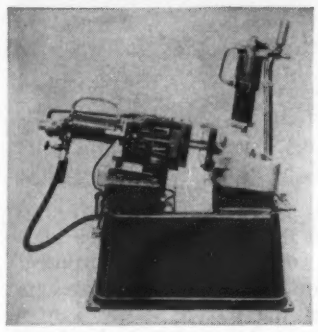
Now you flick a switch to get the right sanding action for any production sanding job with the Model 692. One minute it's a heavy duty orbital sander for fast stock removal (perfect whenever the sanded surface will be painted). The next minute it's a straight line sander for fine, "swirl free" finish work (perfect when the sanded surface will be stained, varnished or lacquered).

Ask your Skil distributor for a demonstration. Look under "Tools-Electric" in the Yellow Pages. Or for full information write: Skil Corporation, 5033 Elston Avenue, Chicago 30, Illinois. Dept. 119L

SKIL ...AND SKILSAW POWER TOOLS

▲ For more details circle NED-346 M on enclosed inquiry slip ▲

AUTOMATIC DIE CASTER
produces up to 1-lb castings at 1000 shots per hour average

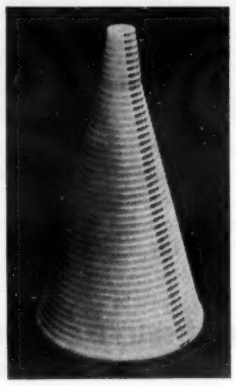


Small, low-cost DCMT Model MAC/99 automatic cycling die casting machine produces small zinc castings up to 1 lb in weight at speeds averaging 1000 shots per hour. Basic machine can be operated manually by pushbuttons. It is available with various plug-in attachments which provide a degree of automation and flexibility.

Plugging in the Autocycle timer unit enables machine to go through an automatic cycle, initiated by a single pushbutton. Air-operated brush device mounted over the dies cleans die faces of dirt and flash. Controls for keeping dies and pot metal at proper temperatures are also provided, and continuous flow of correct temperature metal to the machine pot is assured by the automatic ladling preheat furnace. • **DCMT Sales Corp.**, 80 Shore Rd., Port Washington, New York.

▲ For more details circle NED-347 M on enclosed inquiry slip ▲

O-RING GAGE
covers 1 to 6¼-in. ID size range



An unmarked O-ring can be dropped onto this O-ring gage and its size instantly identified by reading it directly from the side of the step it fits. The lightweight, rigid polyurethane foam gage retains its shape. A canvas cover protects it when not in use, and a threaded base connection makes possible rigid mounting. • **Baker Oil Tools, Inc.**, Dept. RC, Box 3048, Houston 1, Tex.

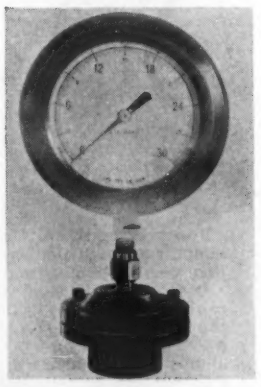
▲ For more details circle NED-348 M on enclosed inquiry slip ▲

PRESSURE CONTROL
actuates sealed mercury contacts

Added to the D-Series of pressure controls, three models with minimum operating differentials of 450, 200, and 150 psi have operating ranges of 500 to 5000 psi. The welded steel Bourdon tube has a leakproof Teflon-sealing nut on the ½-in. IPS bottom connection. Features include external adjustment, visible dial, sealed mercury contacts, visible on-off positions, and choice of general purpose, weatherproof, and explosionproof cases. • **Mercoid Corp.**, 4201 Belmont Ave., Chicago 41, Ill.

▲ For more details circle NED-349 M on enclosed inquiry slip ▲

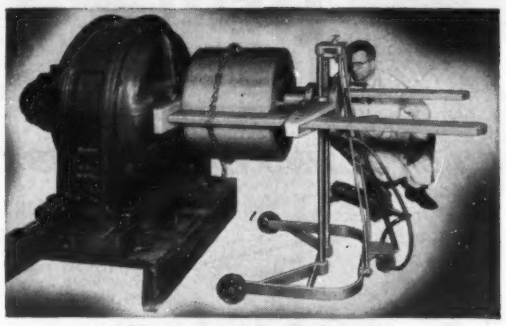
PRESSURE INSTRUMENT SNUBBER
protects against corrosion, plugging



Incorporated into the downstream side of the usual diaphragm seal, the Sealed System Pressure Snubber is factory adjusted to permit upscale or downscale equilibrium readings in about 2 to 3 sec. Pressure instruments are protected against corrosion and plugging by the device, usable on systems with transient line surges or pulsations. The porous metal snubber also prevents the flow of corrosive materials into the bourdon tube if the diaphragm ruptures. A two-piece housing assembly is used on gage systems to be protected from corrosive liquids. Systems handling viscous materials or slurries which tend to clog the diaphragm seal's lower chamber can use a three-piece assembly which permits cleaning of the seal. • **Chemiquip Co.**, 36 E. Tenth St., New York 3, N. Y.

▲ For more details circle NED-350 M on enclosed inquiry slip ▲

THE QUICK, EASY WAY TO REMOVE AN OBJECT FROM A SHAFT!



This Powerful, Hydraulic

PULLEY PULLER

For Removing Pulleys, Wheels, Gears, Couplings, Sheaves, etc.

One man can do it in minutes — even if objects are stuck fast. No crowbars, sledges, or torches. No damage to equipment. Puller is adjustable — easy to move — rugged. Hundreds being used in industry.

- **5-ton size on wheels** **$122.00**
- **20-ton size on wheels** **$368.00**
- **50-ton size on wheels** **$830.00**

F.O.B. Factory, New Quicklink chain and set of ten ram adaptors at slight additional cost.
Write for complete information - Catalog E

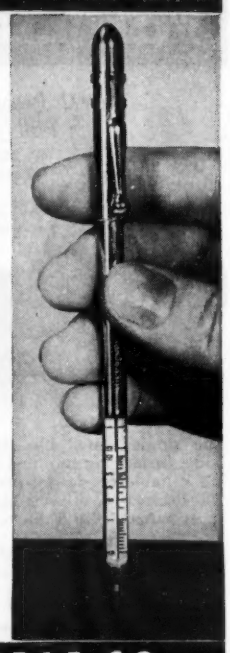
INDUSTRIAL ENGINEERING EQUIPMENT CO.
122-124 E. 4th St. Davenport, Iowa

▲ For more details circle NED-351 M on enclosed inquiry slip ▲

TINSLEY THICKNESS GAUGE

DUAL-SCALE

A simple and inexpensive gauge for measuring the thickness of non-magnetic coatings such as paints or plating on ferrous bases.



FEATURES

- Easy to use and carry
- Will determine thickness on radii (irregular or curved surfaces present no problem)
- Not affected by vibration and temperature—special Alcomax magnet used
- Negligible error, if any, if used in vertical upside down position, or horizontally
- Will not damage coatings
- An additional scale for special calibrations is on the reverse side of each gauge.

Range: 0.0002 to 0.015 inches (or 0-400 microns)

Mean Accuracy: ± 15% or 0.0001 inch whichever is greater.

Write for BULLETIN 28P1-D

B-606

JAMES G. BIDDLE CO.
Electrical & Scientific Instruments
1316 ARCH STREET, PHILADELPHIA 7, PA.

▲ For more details circle NED-352 M on enclosed inquiry slip ▲

NEW 72-page GAGE and CONTROL Catalog

..tells where to use them..

..WHY and HOW!

Illustrates instruments and gages...*diagrams* their installation and on-the-job use... *charts* valuable performance data.

For the efficient measurement of combustion • draft • pressure • flow • vacuum • CO_2 • smoke • velocity • static pressure • pressure differential • temperature • and others.

Write for your free copy of this valuable book today!

Dwyer CONTROLS GAGES

F. W. DWYER MFG. CO.
P.O. BOX 373-Q, MICHIGAN CITY, INDIANA

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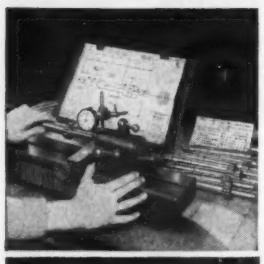
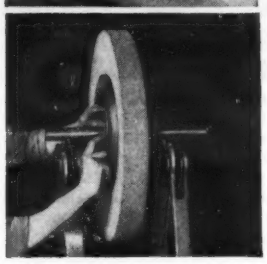
Check balance and runout accurately with Sundstrand accessories





Check Runout Within .0001" Limits on gears, sprockets, pinions, etc. Sundstrand "one-hand control" over all moveable elements leaves other hand free to control rotation of part. Standard bench centers in ten sizes range from 6" x 18" to 24" x 72".

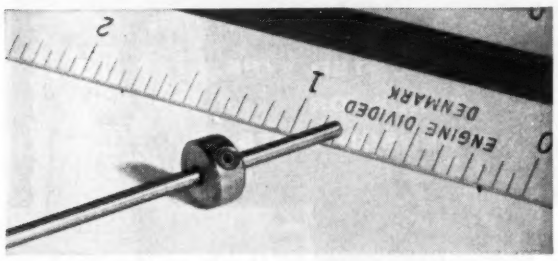
Balance Grinding Wheels, Flywheels, Pulleys, etc., quickly and precisely on any of nine standard sizes of Sundstrand balancing tools. All but No. 5 extra-heavy duty size are portable, can be placed where needed without leveling. Capacities range from 12 to 24,000 lb. No limit on "swings" or distance between centers.

DISTRIBUTORS:
Sundstrand Bench Centers and Balancing Tools offer attractive sales opportunities. Investigate. Details on request.

SUNDSTRAND-AMERICAN BROACH
DIVISION OF SUNDSTRAND CORPORATION
ANN ARBOR, MICHIGAN

▲ For more details circle NED-354 M on enclosed inquiry slip ▲

NOW! For miniaturized assemblies...



HALLOWELL steel collars in microsizes

- 1/16, 3/32, 1/8 inch bore
- Fitted with UNBRAKO set screws for positive locking action
- Precision machined from finest bar stock
- Extremely versatile—used as thrust collars, locking collars, spacers, cam operators, indexing devices, etc.

Send for Bulletin 868—complete information on all sizes of HALLOWELL steel and cast iron collars.

INDUSTRIAL FASTENER Division **sps**
JENKINTOWN 24, PENNSYLVANIA

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PAPER TOWELS unfold when pulled from dispenser

Folding arrangement for Sorbette Twin-C paper towels allows them to unfold to full size when pulled from the dispenser. Users, thus, need not open the towels for full utilization. The larger dispensed size reportedly discourages wasteful use of these high moisture capacity towels. • **Crown Zellerbach Corp.,** 1 Bush St., San Francisco, Calif.

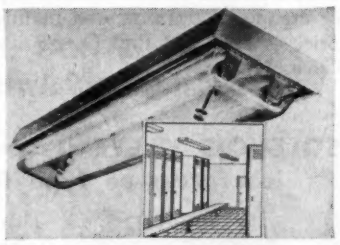
▲ For more details circle NED-357 M on enclosed inquiry slip ▲

ROTARY LIMIT SWITCH compact unit has four circuits

Machine tools, handling devices, and rotary operators where motion is expressed in shaft rotation can be served by this four-circuit rotary limit switch. Four single-pole double-throw switches and four independently adjustable cams are housed in a NEMA Class 1 enclosure. The 5½ x 3½ x 2½-in. glass fiber case resists acids, alcohols, hydrocarbons, and heat. Isolated contacts are rated at 5 amp, 115 and 250 v ac and 3 amp, 30 v dc. Cam arrangements from 25 to 335-degrees in 20-degree steps are available, along with 15 gear ratios from 5:1 to 1000:1. Other ratios, cam arrangements, and enclosures can be specified. • **Gemco Electric Co.,** 25685 W. Eight Mile Rd., Detroit 40, Mich.

▲ For more details circle NED-358 M on enclosed inquiry slip ▲

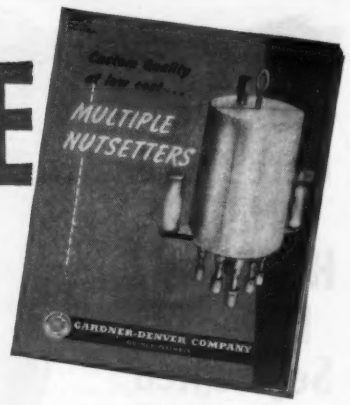
FLUORESCENT FIXTURE is resistant to dust and moisture



Particularly suited for use in food, chemical, pharmaceutical, and packing plants as well as in shower and washrooms, this D.M.R. fluorescent fixture is designed for protection from dust, dirt, moisture, and other foreign matter. Smooth top fits flush to ceiling to prevent dust accumulation. The one-piece plastic enclosure is smooth and rounded for cleaning ease. The entire lamp assembly is covered and gasketed so that it can even be hosed down without damage. This two-lamp 4-ft rapid start unit is offered with clear or diffusing acrylic plastic enclosure for individual or continuous mounting. • **Miller Co.,** Dept. PR-103, Meriden, Conn.

▲ For more details circle NED-359 M on enclosed inquiry slip ▲

FREE



12-page bulletin on multiple nut setters

Bulletin 16-101 is packed with valuable data on the design and application of Gardner-Denver multiple nut setters. Completely illustrated with pictures and diagrams, it shows how *you* can automate your production lines with fast, low-cost multiple nut setting. Write for your free copy of Bulletin 16-101 today.

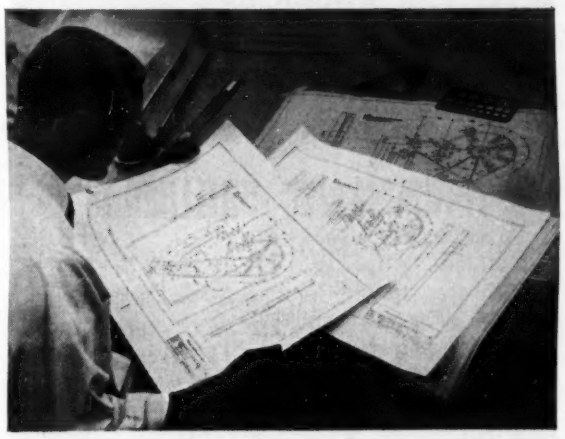
EQUIPMENT TODAY FOR THE CHALLENGE OF TOMORROW
Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Ave., Toronto 16, Ontario

GARDNER-DENVER

▲ For more details circle NED-360 M on enclosed inquiry slip ▲

XEROGRAPHY

for engineering drawing reproduction



High-quality engineering prints in *half* the time, at dramatic savings!

Xerography is the fast, clean, dry, *electrostatic* copying process which has revolutionized engineering drawing reproduction! Haloid Xerox copying equipment is now saving industrial firms up to *$500,000* annually! It's available to you, without capital investment, at modest monthly rentals.

For high quality offset paper masters: XeroX® Model 1218 copying equipment. Sharp, inexpensive paper masters are made from original drawings of A to D size, reduced or enlarged to 12" x 18" masters for quick run-off.

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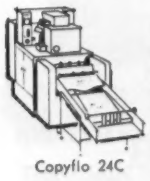

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Reproduction from card-mounted microfilm: The XeroX Copyflo 24C (for high volume users) and the new Copyflo 1824 (for low volume users) automatically reproduce from 35mm card-mounted microfilm. Produce sharp, dry prints on ordinary paper, vellum or offset paper masters.

Copyflo 1824

GET ALL THE FACTS! Send for EDX Booklet today. Write: HALOID XEROX INC., 60-137X Haloid St., Rochester 3, N.Y. Branch offices in principal U.S. and Canadian cities. Overseas: Rank-Xerox Ltd., London.

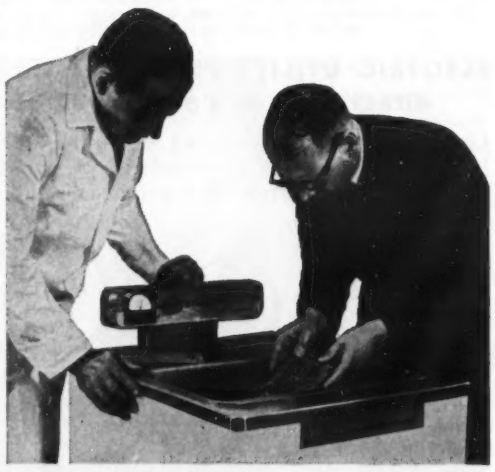
HALOID XEROX®

▲ For more details circle NED-361 M on enclosed inquiry slip ▲

Westinghouse offers completely new concept in ultrasonic cleaning equipment

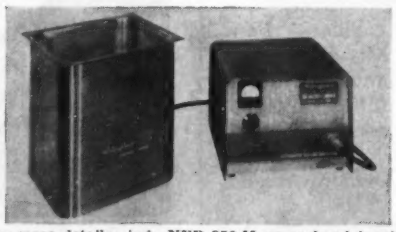
Two recent technological developments—our exclusive Trinistor* solid state circuitry and the new space-laminated magnetostrictive type Magnopak* transducer—have enabled Westinghouse to develop a complete line of ultrasonic cleaning systems which are much smaller and clearly more efficient than the competitive systems now available. In addition, these new systems provide unmatched reliability, sturdiness, and cleaning performance.

Literature is available which describes the various features of these new Westinghouse systems, and we'll be glad to send it to you if you would like a copy. Or perhaps you would prefer to discuss your particular cleaning problem with a Westinghouse ultrasonics engineer. In either event, just call, wire, or write to Mr. Albert Valente, Industrial Electronics Dept., Westinghouse Electric Corporation, 2519 Wilkens Ave., Baltimore 3, Md. *You can be sure . . . if it's Westinghouse.*



Westinghouse

At Right:
SMALL TABLE-TOP CLEANING SYSTEMS are especially useful for cleaning bearings and other complex mechanical assemblies. Here are small units packed with power, yet available at low cost.
Model WE-20. 3 watt intensity per square inch, 5 gal. tank and generator with 150 watt output.
$995
Model WEHH-10. 6-11 watt intensity per square inch, 1½ gal. tank and generator with 500 watt output.
$1250



Above:
NEW PORTABLE CLEANING SYSTEM features generator, transducer, tank and controls all mounted in a single compact roll-about console. Model pictured here has 6-11 watt intensity per square inch, 5 gal. tank and generator with 1,000 watt output. Model PM-WEHH-20.
$2690

*Registered Trade Mark

J-35018

▲ For more details circle NED-356 M on enclosed inquiry slip ▲

Here's The New! HOFFMAN Diamond Segmented SAW BLADE

Fast, Accurate Cutting Through Most Of The Hardest Abrasive Materials Known.

Saws hardest concrete, sandstone, granite, marble, silica brick, monofrax, zac block and many others. Recommended operation assures long life and increased production savings. Available with 14 different cutting edge bonds for top performance in any material.

Write for Illustrated Literature and Prices—FREE

HOFFMAN BROS. DRILLING CO.

106 Cedar Street Punxsutawney, Pa.

▲ For more details circle NED-362 M on enclosed inquiry slip ▲

IT'S A FACT!

DRILLHEADS

ARE OBVIOUS.

...Tremendous economies from the use of multiple-spindle drillheads are obvious. Drilling one hole at a time cannot be tolerated in this day of automation!

THOMSON

THRIFTMASTER DRILLHEADS

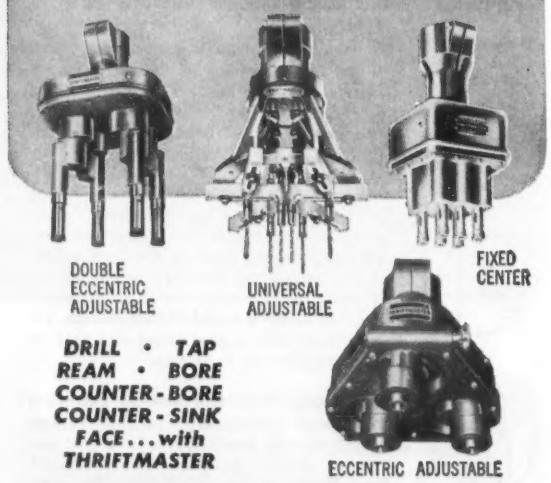
... are your best Drillhead buy...

1. They are better built and cost no more (Full ball bearing construction, hardened gears, spindles and driver, and precision grinding!)
2. This means they last longer
3. This eliminates down time
4. This eliminates production losses
5. This drastically reduces drilling costs

THOMSON

THRIFTMASTER DRILLHEADS

... are designed and produced by engineers whose experience in this specific field dates back to 1923. This long accumulation of engineering technique and production "know-how" is reflected in our product—a quality tool... solid, substantial and dependable!



DRILL • TAP
REAM • BORE
COUNTER-BORE
COUNTER-SINK
FACE... with THRIFTMASTER

Ask NOW for our new catalog!

THRIFTMASTER PRODUCTS CORPORATION

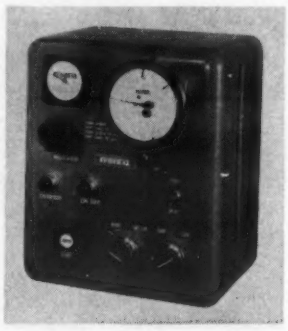
1028 NORTH PLUM STREET
LANCASTER, PENNSYLVANIA
Phone EXpress 2-2101

Also Makers of DORMAN TAPPERS

Subsidiary of THOMSON INDUSTRIES, INC. makers of BALL BUSHINGS NYLINERS 60 Case Shafting

▲ For more details circle NED-363 M on enclosed inquiry slip ▲

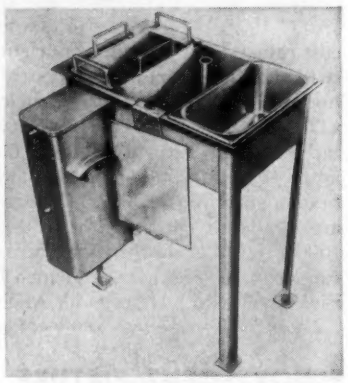
DIMENSIONAL CONTROLS
for automatic cutting and grinding



Four basic models of this transistorized dimensional control unit cover single or double limit control of inside or outside diameter grinders. They are usable with various types of gage tooling for automatic control of plunge cut and internal grinding operations. Each compact unit is fail-safe, both pneumatically and electrically. Built-in testing facilities permit rapid tracing and isolation of trouble independent of machine operation. Only one master is required for setting to size. Units are available separately or with tooling required for a particular machine. • **Federal Products Corp.**, 1144 Eddy St., Providence 1, R. I.

▲ For more details circle NED-364 M on enclosed inquiry slip ▲

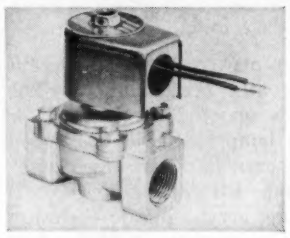
METAL PARTS CLEANER
removes carbon, oxides, paint



Parts of simple or complex configuration are cleaned of encrusted carbon, weld oxides, brazing flux, varnish, and paint in this metal parts cleaner. PALL-Clean solutions which contain effective chemicals and detergents are used. Stainless steel, brass, aluminum, carbon steel, nickel and nickel alloys, and other metal parts come out with a bright surface finish. Operation requires little or no special training, and maintenance is low. Initial price is $798. • **Pall Corp.**, 30 Sea Cliff Ave., Glen Cove, N. Y.

▲ For more details circle NED-365 M on enclosed inquiry slip ▲

SOLENOID VALVE
low pressure type for fluid service

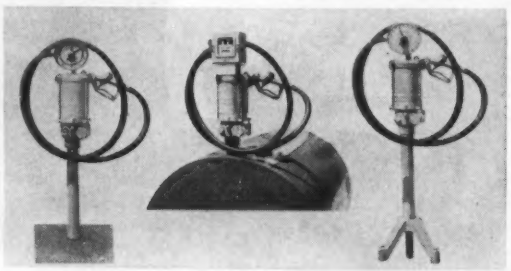


This compact, two-way solenoid valve with ¾-in. pipe connections can be used in air, water, steam, and noncorrosive liquid and gas service at up to 215° F. It has a forged brass body and bonnet, soft composition disc, and stainless steel core and spring. The normally-closed valve is offered with standard, explosionproof, or watertight enclosures in 10.5, 14.8, and 10.6-w coil ratings, respectively, and in all standard ac voltages. Direct-current coils are also available. • **Automatic Switch Co.**, Hanover Road, Florham Park, N. J.

▲ For more details circle NED-366 M on enclosed inquiry slip ▲

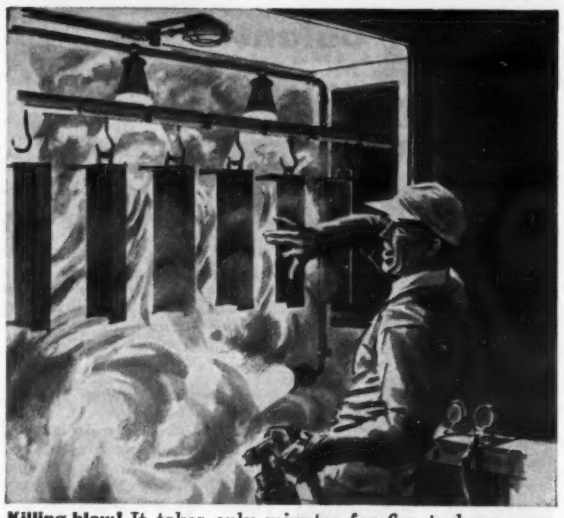
ELECTRIC UTILITY PUMP
direct drive unit delivers 12 gpm

Gasoline, kerosine, diesel fuel, and other fluids are handled by the Series 57 electric utility pump. The lightweight, direct drive unit is permanently lubricated,



and is offered with a choice of three counters. Basic model (center) is for skid tank use. Kits for pedestal mounting (right) and direct underground tank installations (left) are available. Pump utilizes a ¼-hp, 115/230-v, 60-cycle ac motor. Motor assembly, meter, and pump are UL-approved for indoor or outdoor use. • **John Wood Co.**, Bennett Pump Div., Muskegon, Mich.

▲ For more details circle NED-367 M on enclosed inquiry slip ▲



Killing blow! It takes only minutes for fire to burn your business to a crisp. Guard against the danger of a crippling flammable-liquid fire (as in the spray booth above) with a *fully automatic* Kidde carbon dioxide extinguishing system. Approved by U.L. and F.M., Kidde systems smother flammable-liquid and electrical fires in seconds, leave no mess, turn off power and sound alarms... get you back in production fast. Kidde's 35 years of experience can help you protect any hazard. Write Kidde today and find out how.

Kidde

Industrial and Marine Division
Walter Kidde & Company, Inc.
1224 Main St., Belleville 9, N. J.
Walter Kidde & Company of Canada Ltd.
Montreal—Toronto—Vancouver

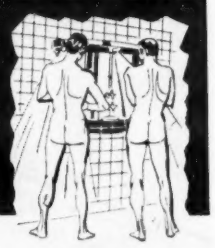
▲ For more details circle NED-368 M on enclosed inquiry slip ▲

NEW ECONOMICAL SHOWERS

BRADLEY

WALL-MOUNTED TYPE

THREE- OR TWO-PERSON UNITS



Here's another Bradley Multi-Person Shower—the new Wall-Mounted Type—two or three showers in one self-contained unit.

You can have Showers at low cost because installation on wall at any height requires but *one set of piping connections*—no floor space is needed and each bather has individual control of water volume and temperature.

Made in stainless steel or enameled steel (in white and six decorator colors)—attractive, self-contained and assembled. For dimensions and other data see page 2 of new Shower Bulletin H-1322. Copy mailed on request. BRADLEY WASHFOUNTAIN CO. 2253 W. Michigan St., Milwaukee 1, Wis.

BRADLEY multi-person showers

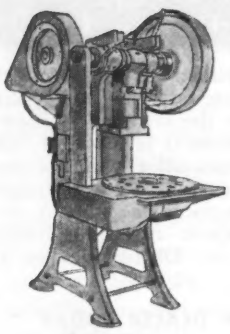
Write for Bulletin H-1322

▲ For more details circle NED-369 M on enclosed inquiry slip ▲

▲ For more details circle NED-370 M on enclosed inquiry slip ▲

Job-tested
for supreme accuracy
at higher speeds!

DIAL FEED
FEDERAL • • • • • • • • • • PRESSES



- Anti-friction bearings
- Meehanite castings
- Shear pin protection
- Precision without lock pins
- Accuracy guaranteed
- Checks alignment each index for die protection
- Low acceleration and deceleration
- Gear or chain drive
- Hardened and ground indexing cam
- Automatic lubrication

MMT-PE

FEDERAL dial feed **PRESSES**

THE FEDERAL PRESS COMPANY
of Elkhart
Dept 806 Elkhart, Indiana

For more details circle NED-371 M on enclosed inquiry slip

UP...
WITH
SAFWAY
1-MAN
MOTO-LIFT

self-elevating work tower comes in battery-operated and 110-volt plug-in models

ROLLS to the job on swiveling casters.
RISES to 17 ft. in 40 sec. (foot-button control).
TELESCOPES to clear 30" x 6'8" doors.
ONE-MAN operation.
SAFE at all levels.

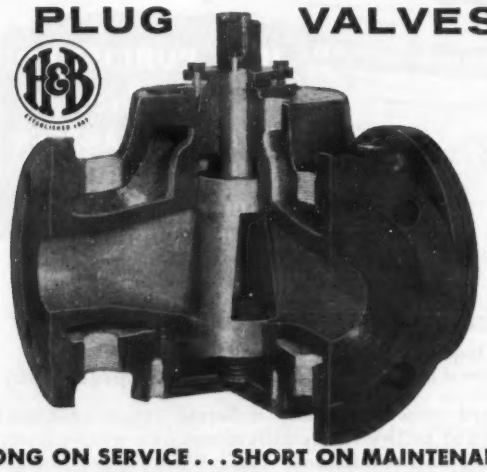
WRITE FOR BULLETIN 712N

SAFWAY

SAFWAY STEEL PRODUCTS, INC., 6228 W. STATE ST., MILWAUKEE 13, WIS.

For more details circle NED-372 M on enclosed inquiry slip

Jacketed Spring Loaded
PLUG VALVES



LONG ON SERVICE . . . SHORT ON MAINTENANCE

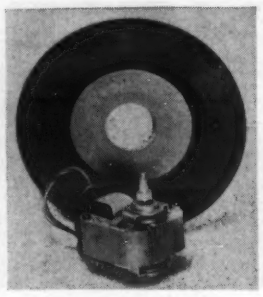
H & B's new fully jacketed spring loaded plug valves feature an inverted tapered plug inserted and lapped into the housing from the bottom of the valve—then spring loaded. The spring wedges the plug to a perfectly tight seal, eliminating troublesome leaks. Easy to operate—no big handwheel . . . no freeze . . . no "breaking loose" necessary. Easy to clean. Made in two port or multi port design, with any special stop arrangement desired.

Available in 2-way or straight, 3-way or angle, also air cylinder operated—all sizes and types. Bulletin J-57 sent on request.

HETHERINGTON & BERNER INC.
725 KENTUCKY AVE. INDIANAPOLIS 7, IND.

For more details circle NED-373 M on enclosed inquiry slip

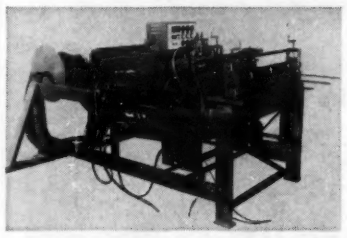
SYNCHRONOUS MOTOR
for constant-speed positive drives



Permanent magnetization of both ends of an induction motor gives the rotor of this synchronous motor a combination of synchronous and induction torque. It permanently locks into synchronous speed and is free from slip. Designed for driving record players and changers, it has other applications in tape recorders, timers, data processing, and other equipment. The constant speed motor has the features of a hysteresis synchronous motor at a price comparable to standard two or four-pole shaded motors. • **Alliance Mfg. Co.**, Lake Park Boulevard, Alliance, Ohio.

For more details circle NED-374 M on enclosed inquiry slip

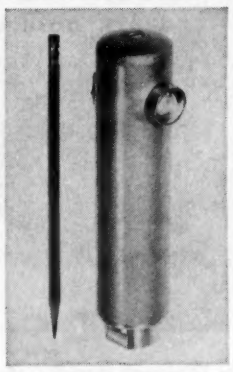
METAL FEEDER-SHEAR
cradle rack supports 10,000-lb coil



An electric eye automatically "tells" a flying shear the number of feet and inches to be cut by this automatic feeder-shear. Lengths from 2 to 100 ft can be set and changed during operation. The machine has a powered cradle rack which supports up to a 10,000-lb, 48-in. roll of coiled metal. It straightens the metal after pulling it from the coil, levels it, moves it through the integral flying shear, then feeds the cut off piece into another machine for fabrication. The 15-in. model feeds and shears 6 to 15-in. metal and the 36-in. model has a 6 to 36-in. capacity. • **Welty-Way Products Co.**, 714 First Ave. N.W., Cedar Rapids, Iowa.

For more details circle NED-375 M on enclosed inquiry slip

PHOTOELECTRIC CONTROL
operates with 0.015-sec impulses



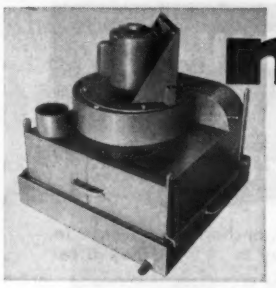
Transistorized printed circuit is contained in this tubular Type 22LB5 photoelectric control package. A cadmium selenide cell, power transformer, and output relay are also included in its 7½ x 1⅝-in. flashlight type cylinder. A conduit hub threaded for ½-in. pipe permits mounting in any position. Matching Type 40CE1 light source operates with light impulses as short as 0.015 sec at light beam ranges up to 20 ft. Relay is single-pole double-throw type. • **Electronics Corp. of America**, Photoswitch Div., 1 Memorial Dr., Cambridge 42, Mass.

For more details circle NED-376 M on enclosed inquiry slip

MOTOR GENERATOR WELDER
feeds small wire electrode

Welding wire with diameter from 0.02 to 0.045 in. is continuously fed by the Micro-Wire packaged welder into a welding zone shielded by carbon dioxide gas or an argon-carbon dioxide mixture. The compact, constant voltage, motor generator welder is rated 200 amp at 25 v and is designed for automatic welding. Process using the bare wire electrode is used on various metals, particularly sheet metal and where poor joint fit-ups are encountered. Outfit includes welder with ammeter and voltmeter, wire feed unit, Micro gun and cable, gas regulator, and flowmeter with hose and argon adapter fitting, all on a portable unit which can also carry two cylinders of gas. • **Hobart Brothers Co.**, Hobart Square, Troy, Ohio.

For more details circle NED-377 M on enclosed inquiry slip



new
Hammond Junior
MistKolector
ONLY **$194**
with motor and manual control

Low in cost, this new MistKolector collects mist from wet tool, surface, cylindrical, and thread grinders, automatic screw machines, etc. Requires minimum floor space (22" x 22") or can be mounted overhead. Starts paying for itself the minute you start it up by:

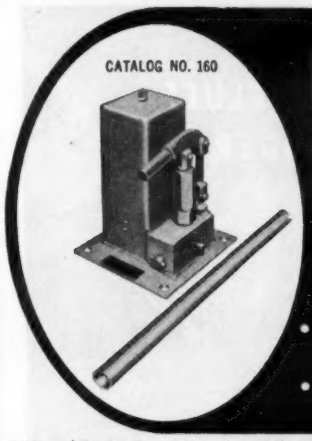
- Protecting employees' health.
- Keeping wet machines cleaner.
- Reducing cleaning costs.
- Reducing fire hazard.

Order today. After it's in service, you will not part with it for many times the cost.

Hammond Machinery Builders INC.
1623 Douglas Ave., Kalamazoo, Michigan
☐ *Please ship us a Junior MistKolector.*
☐ *Send complete catalog on Dust and MistKolectors.*
NAME _____
FIRM _____
ADDRESS _____
CITY _____ STATE _____

For more details circle NED-378 M on enclosed inquiry slip

CATALOG NO. 160



Hand Hydraulic Pumps
- Single and Double Designs to 20,000 psi
- With or Without Reservoir

160 cubic inch reservoir with 8"x 8" base plate and 18" long handle.

Available with optional size pistons ⅜", ½", ¾", 1" and 1½".

We specialize in the manufacture of hand pump units which operate in temperatures from −65° F. to +160° F. and with any capacity reservoirs required. Pumps can be furnished on special order with custom seals to handle various aircraft types of fuels such as Pydraul, Skydrol, Oronite, etc.

The single pump with ½", ¾", 1" or 1½" piston is now available in stainless steel.

for additional information write:

WILLIAM S. PINE
hydraulic hand pumps for 1001 uses
1635 East 22nd St., Los Angeles 11, Calif.

For more details circle NED-379 M on enclosed inquiry slip

GOING CUCKOO
WAITING FOR PRINTS?

THEN END YOUR FRUSTRATION,
SAVE your Valuable Time, STOP Wasting your Money
MAKE your own Whiteprints in Seconds for Pennies

Find out now about BLU-RAY, the finest made (guaranteed for a full year) white printer on the market!

BLU-RAY copies anything written, printed, typed or drawn on any translucent material. Speeds up to 4½ feet per minute; makes 42-inch wide prints, any length. 3 Lamps for more speed; finger-tip speed control; makes sepia reproducibles. Truly pays for itself.

UL and CSA Approved

BLU-RAY

BLU-RAY available on low cost monthly payments

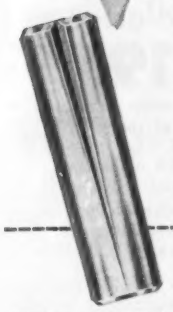
FREE Brochure and Demonstration

TO: REPRODUCTION ENGINEERING CORPORATION
70 Westbrook Road, Essex, Connecticut
☐ Demonstrate Blu-Ray ☐ Rush brochure
Name _____
Company _____
Street _____
City and State _____

For more details circle NED-380 M on enclosed inquiry slip

have you checked

DRIV-LOK PIN *advantages?*



1. Positive anchoring . . . once in they *stay in* . . . yet they're reusable
2. Stronger, safer, solid body
3. Quick installation . . . Lower Costs

DRIV-LOK Pins are effecting great economies and product improvement in applications of every type. Easy to install — just drill the hole and press or drive them in. The job is done — no reaming, no expensive hole preparation. Available in carbon steel in 8 standard types; also a wide variety of special materials. Write us, describing your fastening requirements. Catalog and samples sent without obligation.

TYPICAL APPLICATIONS:

DRIV-LOK SALES CORPORATION
717 Park Avenue • Sycamore, Illinois

For more details circle NED-381 M on enclosed inquiry slip

M&M AIR FLUFF PAPER SHREDDER

101

A valuable machine, to you, for the speedy, safe, efficient disposition of blueprints, letters, confidential records. The M & M Air Fluff Paper Shredder is also a money saver to those companies that use quantities of paper excelsior—by converting waste paper into valuable excelsior. Adjustable cuts of 1/8", 3/16", 1/4", or 3/8" widths. Models range in productive capacities from 200 to 2500 pounds per hour. Write for descriptive folder.

MITTS & MERRILL
1000 SO. WATER ST. • SAGINAW, MICHIGAN

For more details circle NED-382 M on enclosed inquiry slip

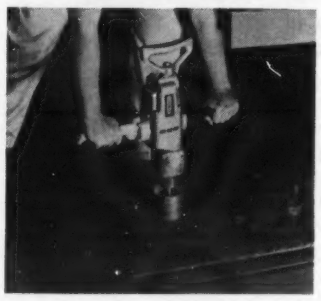
Neat, sanitary assemblies designed for Food-Beverage services, or other anti-corrosion, anti-contamination uses—long life, easy operating. Stainless steel with either solid stainless door or LASTIGLAS coated steel door. Swing-in type or swing-in/swing-out in sizes 13" x 18", 15" x 20". Immediate Delivery. Ask for Bulletin M-60.

Also sanitary, pressure-type Sighthole assemblies, 10" x 14".

BISHOPRIC PRODUCTS COMPANY
4413 Este Avenue, Cincinnati 32, Ohio
TANKS / LININGS / DESIGNERS / FABRICATORS

For more details circle NED-383 M on enclosed inquiry slip

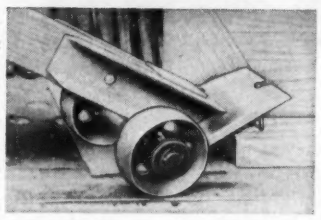
ELECTRIC IMPACT DRILL
penetrates concrete rapidly



From 3/16 to 4-in. diameter holes are cut in concrete, brick, granite, masonry tile, and terrazzo with the No. 404 electric impact drill. Its high frequency impact-rotating action drills these materials rapidly for installation of anchors, dowels, pipe, and conduit. It also cuts through embedded metals of varying hardness and density. Clean, precise cuts are made without chipping, cracking, or breaking out when close to an edge, and with little spalling at the end of the cut. With extension couplings, the drill is capable of boring 10 to 30-ft deep holes, depending upon the type of materials. The enclosed mechanism drill, metal carrying case, and two drift pins lists for $375. • **Stanley Works,** Stanley Electric Tools Div., 195 Lake St., New Britain, Conn.

For more details circle NED-384 M on enclosed inquiry slip

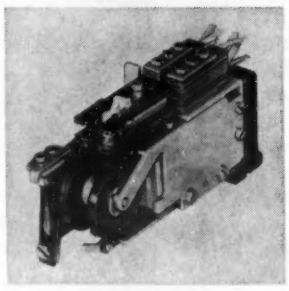
FREIGHT PRY
usable as spike and nail puller



Straight-grained 84-in. long handle of the Model 103B freight pry is thickest in its vertical dimension for maximum beam strength. It is encased at the base with a 3-in. steel channel. Designed for easy and safe moving of heavy cases, crates, die blocks, and machinery, it has a slotted nose for pulling nails and for removing blocking from railroad cars and trucks. The 45-lb tool has 5 x 2⅜-in. cast semisteel wheels and a capacity of 5000 lb. Nose is 3 in. long and 6 in. wide. • **Nutting Truck & Caster Co.,** 1201 W. Division St., Faribault, Minn.

For more details circle NED-385 M on enclosed inquiry slip

PULSE-CONTROL RELAY
counts, absorbs, controls pulses



This 10½-oz Genalex ratchet relay will select one or more pulses at regular intervals from a continuous train of timed, closely-spaced pulses. It will count, absorb, or control these pulses as required and can be used in automatic telephone systems, control of machine tools, summation metering in power stations, recording of aircraft instruments, and control components in data processing systems. Coil of this cam and ratchet relay consumes 150 to 200 ma at 50 v, depending on springset loads. Magnet coil power is restricted to 10 w to avoid overheating. Unit has two springsets, each for up to six contact springs in any combination of makes, breaks, or changeovers. • **IMTRA Corp.,** 11 University Rd., Cambridge 38, Mass.

For more details circle NED-386 M on enclosed inquiry slip

SAFETY SWITCHES
resist 200,000-amp short circuit

Ratings from 30 to 600 amp at 250 and 600 v ac are available in Type TH heavy duty and Type THD heavy duty interrupter safety switches. Both UL-listed units have visible blades and lugs for copper or aluminum conductors. They withstand a 200,000-amp short circuit when used with a current limiting fuse. Type TH switches have double-break contacts imbedded in a phenolic rotor and Type THD units have silver alloy, refractory type contacts. • **General Electric Co.,** Circuit Protective Devices Dept., 41 Woodford Ave., Plainville, Conn.

For more details circle NED-387 M on enclosed inquiry slip

LIFT - LOWER - PULL
with The
PORTABLE
"Cadillac"
WINCH HOIST
Capacity
½ Ton — 1½ Ton — 2 Ton

It's SAFE! It withstands 50% overload! *Every* hoist is pre-tested to full capacity before it leaves the factory. It is easy to handle because it is made of light weight aluminum alloy with stainless steel shafts and springs. Aircraft cable assembly is replaceable without dismantling. Snap-on reversible handle speeds operation. Distributors in all major cities.

PAT. NO. 2,738,954
PAT. NO. 2,927,771

SEE YOUR DEALER TODAY

Full year guarantee against defective workmanship and materials

ALUMINUM PRODUCTS, INC.
698 S.W. 2nd AVE. ESTABLISHED 1943 FT. LAUDERDALE, FLORIDA

For more details circle NED-388 M on enclosed inquiry slip

CUT SANDING COSTS... with Lightweight, FAST

MITY-MIDGET

Cut sanding costs as much as 75% (over hand sanding), with National's Mity-Midget . . . the original orbital action sander. Weighs only 4 lbs . . . yet has 25 sq. in. of abrasive area. Powerful . . . vibrationless. Write for complete catalog, today.

Write for complete catalog
NATIONAL-DETROIT, INC.
ROCKFORD, ILLINOIS

For more details circle NED-389 M on enclosed inquiry slip

FREE—and Important!

Handy Check Chart clarifies selection of proper types

JUST PUBLISHED!
Meyercord Directory to
QUALITY TRANSFER NAMEPLATES
for every surface and condition

Important Facts for your Design and Production Departments

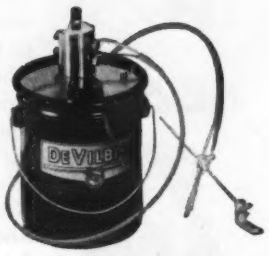
Meyercord produces many different types of Decal Transfers to satisfy the requirements of a wide variety of surfaces and conditions. Available now are Meyercord types that resist abrasion . . . resist weathering . . . and a full selection of heat resistant decals. Some types perform dual functions. It is important to you to know the characteristics of each of these *Performance Rated* transfers. To provide this information in condensed and useful form, Meyercord now offers a new brochure covering the entire subject. It's yours upon request.

Write today . . . on company letterhead, please.

the MEYERCORD co.
Dept. X-316—5323 W. Lake Street, Chicago 44, Illinois

For more details circle NED-390 M on enclosed inquiry slip

MIST-COOLANT UNIT increases forming- and cutting-tool life

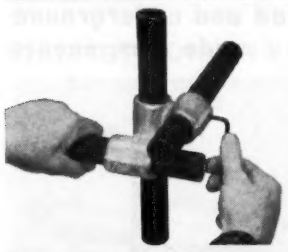


Low-cost DeVilbiss Multi-Mister attaches quickly to all metal-working machinery—lathes, mills, screw machines, drill presses, power saws, internal or external grinders, jig borers, broaches, high-speed presses. Outfit comes complete, ready to install, and includes one- or five-gallon tank, one, two, or four nozzles. Swivel-tip nozzle permits pinpoint aiming, adjusts from coarse spray to fine mist. Check valve provides rapid on-off operation with manual or automatic control. Unit operates from main-line air.

FOR TOTAL SERVICE, CALL DEVILBISS

THE DEVILBISS COMPANY
Toledo 1, Ohio
Branch Offices in Principal Cities

▲ For more details circle NED-391 M on enclosed inquiry slip ▲



instant WORK PLATFORMS
instant STORAGE RACKS
instant SAFETY RAILS

NU-RAIL SLIP-ON FITTINGS

• No Threading • No Welding • No Clamps, Nuts or Washers to Assemble

Racks, railings and work docks made with Nu-Rail structural slip-on fittings are completely flexible . . . can be assembled, altered or disassembled at a moment's notice. Nu-Rail Fittings simply slip right over the pipe; hardened set screws tighten with an ordinary hex wrench.

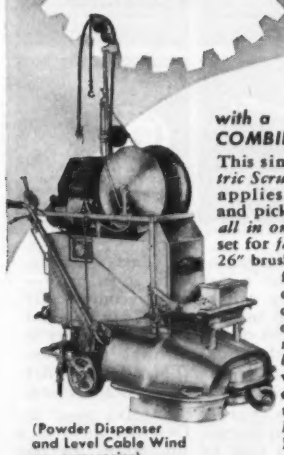
Nu-Rail Slip-on Fittings can save you up to **60%** on labor costs and installation time . . . **100%** on materials salvage! Write for full information.

This work dock constructed with Nu-Rail Slip-on Fittings can be adjusted to conform to different aircraft with a minimum of time and effort.

THE HOLLAENDER MFG. CO., Dept. 40-E, 3841 Spring Grove, Cincinnati 23, Ohio

▲ For more details circle NED-392 M on enclosed inquiry slip ▲

MECHANIZE all Scrubbing Operations into 1



with a COMBINATION SCRUBBER-VAC!

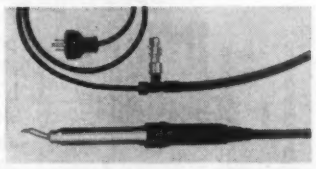
This single unit, *Finnell's 213P Electric Scrubber-Vac* for large-area floors, applies the cleanser, scrubs, flushes, and picks up (damp-dries the floor) — *all in one operation!* No switches to set for *fast* or *slow*. *Self-propelled* . . . 26" brush spread. Cleans up to 8,750 sq. ft. per hour (and more in some cases), depending upon floor condition and congestion. Available on lease or purchase plan. *Finnell* makes a full range of sizes, and *battery, gasoline,* and *propane* as well as *electric* models. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 5512 East St., Elkhart, Ind.

(Powder Dispenser and Level Cable Wind are accessories)

FINNELL SYSTEM, INC.
Originators of Power Scrubbing and Polishing Machines
FINNELL
BRANCHES IN ALL PRINCIPAL CITIES

▲ For more details circle NED-393 M on enclosed inquiry slip ▲

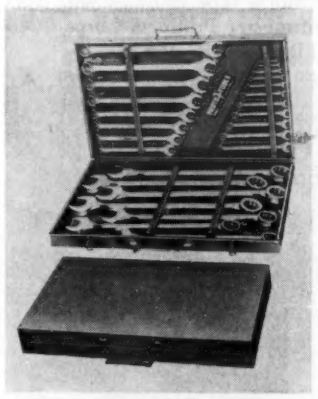
THERMOPLASTICS WELDER
hand unit has 320-w element



Polyethylene, polypropylene, polyvinyl chloride, and other thermoplastics can be welded by the Kamlar Model 14-HW hand welder and tacker. The lightweight, low priced unit has a 320-w 115-v ac heating element, round and tacker tips, and a needle valve for control of air flow. Made of stainless steel, it is supplied with 16 ft of neoprene air hose. • Kamlar Products Co., 932R Washington St., Norwood, Mass.

▲ For more details circle NED-394 M on enclosed inquiry slip ▲

OPEN END & SOCKET WRENCHES
combination set consists of 26 sizes



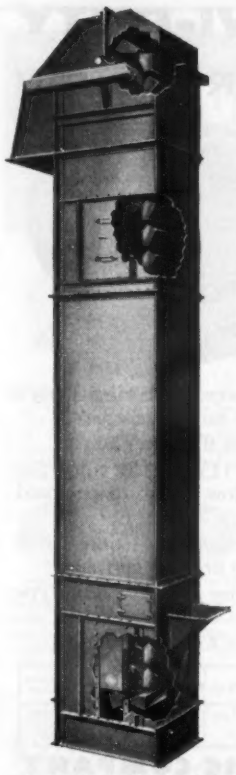
Each combination open-end and socket wrench in Set No. 1200-A is forged of Protoloy alloy steel and chrome plated to withstand weather. Set consists of 26 wrenches with openings from 1/4 to 2 in., each held in place in a heavy duty steel box, yet quickly removable for use. The twin box handles may be padlocked together. The slim wrench heads are designed for clearance with maximum strength. • Proto Tool Co., 2209 Santa Fe Ave., Los Angeles 54, Calif.

▲ For more details circle NED-395 M on enclosed inquiry slip ▲

PACKAGED AIR TUBE SYSTEM
for paper handling in small firms

Paper handling problems in smaller businesses can be solved by this 2 1/4-in. packaged pneumatic Air-tube system. It is complete with power unit, 2 1/4-in. OD tubing, 9-in. long transparent carriers, valves, tube sleeves, hanging rods, tube clamps, and tube joint cement. Once station locations are determined, it only remains to install tubing, and plug system into standard 110-v outlet. Power unit, built into a steel cabinet, has a low noise level, allowing installation almost anywhere. • Lamson Corp., Lamson Street, Syracuse, N. Y.

▲ For more details circle NED-396 M on enclosed inquiry slip ▲



Cement Mill Elevators...
15 to 470 tons per hour

Removable split hood for easy access to head section.

Sealed heavy-duty antifriction bearings entirely outside of casing with dust seals around the head shaft.

Dust-tight and weather-proof 10-gauge steel casing with reinforced corners. Ample clearance between buckets and casing.

Increased capacity by closer bucket spacing. Lips and sides of buckets reinforced.

Equipped with heavy-duty steel knuckle chain assuring long life.

Large access doors for easy inspection and maintenance.

Cleanout doors at front and rear of casing.

Send now for Bulletin 950, or place a call for engineering assistance to The Jeffrey Manufacturing Company, 952 North Fourth St., Columbus 16, Ohio.

JEFFREY

▲ For more details circle NED-398 M on enclosed inquiry slip ▲

Interchangeable with all standard JIC cylinders

CHECK THESE 10 POINTS OF T-J SUPERIORITY

1. One Piece Piston
2. Hard Chrome Cylinder Bore and Piston Rods
3. High Tensile Steel Tie-Rods
4. Cushion Adjusting Screw, Externally Adjustable
5. New Super-Cushion for air, or Self-Aligning Master Seal for Oil (T-J Patents)
6. Solid Steel Heads and Mounting Plates Standard all Models
7. Port Design Allows Minimum Pressure Drop on Inlet or Outlet
8. Chevron Type, Self-Adjusting Rod Packing
9. Piloted Packing Gland—Absolute Alignment
10. Piston Rod, Extra Strong—Polished and Chrome Plated for Efficiency and Protection

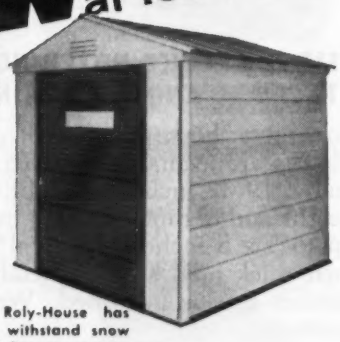
Write today to Tomkins-Johnson, Jackson, Michigan, for Bulletin #SQ 10-58 and complete details.

T-J TOMKINS-JOHNSON

▲ For more details circle NED-399 M on enclosed inquiry slip ▲

MORRISON *Roly-House*

new STORAGE at less cost



PORTABLE STEEL UNIT
TWO SIZES
7'x7'
7'x10'4"

- The Morrison Roly-House has been tested to withstand snow loads up to 30 lbs. per square foot and wind velocities up to 100 miles per hour.
- All surfaces, both inside and outside, bonderized and painted
- Equipped with famous Morrison steel sectional upward acting Roly-Door.
- All parts pre-drilled for easy assembly.

MORRISON STEEL PRODUCTS, INC.
657 AMHERST ST. · BUFFALO 7, N. Y.

▲ For more details circle NED-397 M on enclosed inquiry slip ▲

MORRISON *Roly-Doors*

Slash DOOR Costs
COMMERCIAL-INDUSTRIAL
Complete range of sizes to meet all requirements

Morrison Roly-Doors are sectional upward acting overhead steel doors designed for residential, commercial and industrial applications. They roll up and down quickly, quietly, smoothly and safely, completely inside the building. In Roly-Doors, Morrison offers an extremely rigid all-steel door of welded construction that minimizes the number and weight of component parts.

MORRISON STEEL PRODUCTS, INC.
657 AMHERST ST. · BUFFALO 7, N. Y.

▲ For more details circle NED-400 M on enclosed inquiry slip ▲

new..... HEVI-DUTY CIRC-O-THERM OVEN

Temperatures to 250° C. (480° F.)

Improved Temperature Uniformity. With Hevi-Duty's "circle-of-heat" design there are *no cold corners.*
Fast Heat-Up. To 200° C. in less than one hour.
Low-Cost Operation on either 115 or 230 volts. Selector switch permits high or low input to enclosed heating elements.
Durable Double-Wall Construction. Steel outer shell is prime coated on both sides to prevent corrosion.
Accurate Temperature Control by sensitive bulb-type thermostat permits little lag or overshoot.
For complete information, write for Bulletin 458.

Model	Price	Chamber Size		Watts	Volts	Overall Dimensions			Shipping Weight
		Diameter	Depth			Width	Depth	Height	
HK	$169.	15	13	600	115/230	20	18	23	80
HL	$265.	20	18	1000	115	25	23	28	100

HEVI DUTY ELECTRIC COMPANY
WATERTOWN, WISCONSIN
▲ For more details circle NED-401 M on enclosed inquiry slip ▲

LEAK-PROOF DYNAPUMP AVOIDS 90% OF CONVENTIONAL PUMP PROBLEMS

Model 670E Fractional horsepower canned pump

This totally-enclosed pump-motor unit has no shaft seal or stuffing box . . . prevents fluid loss or contamination. No lubrication required . . . no couplings or alignment problems. Low cost, compact, lightweight . . . made of corrosion-resistant stainless steel . . . easily mounted in any position.

Write for catalog, Chempump Division, Fostoria Corporation, Huntingdon Valley, Pa.

DYNAPUMP
▲ For more details circle NED-402 M on enclosed inquiry slip ▲

You Get **WATER** *that is*

- CRYSTAL CLEAR
- NON-CORROSIVE
- NON-CLOGGING
- NON-PRECIPITATING

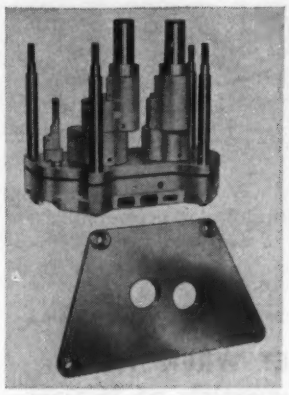
with **S-K WATER CONDITIONING**

Stiles-Karlsonite Water Conditioning halts corrosion . . . scale . . . on all your water-using equipment. • Preventive maintenance . . . NOW . . . with Stiles-Karlsonite Water Conditioning products prolongs equipment life . . . improves operating efficiency . . . keeps water systems trouble-free.

Today . . . write for new 24-page brochure . . . full of valuable information.

STILES-KARLSONITE CORPORATION
Dept. SKC Waukegan, Illinois
▲ For more details circle NED-403 M on enclosed inquiry slip ▲

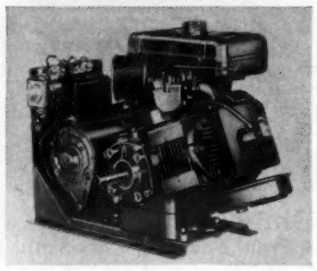
ADJUSTABLE DRILLHEAD
two-spindle type for 2-in. holes



Each spindle of this super heavy duty, double-eccentric, adjustable drillhead adjusts anywhere within a 7.2-in. radius about the drive. A maximum center distance of 22.4 in. is possible. The two-spindle unit shown is built to drill 2-in. holes in solid steel forgings. Its ball bearing construction, heat treated and hardened chrome-moly steel gears, and head spindles are designed to carry heavy loads. Head has No. 5 Morse tape spindles with vertical adjustment. • **Thriftmaster Products Corp.**, 1048 N. Plum St., Lancaster, Pa.

▲ For more details circle NED-404 M on enclosed inquiry slip ▲

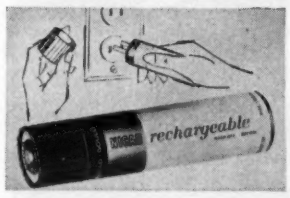
STARTER-GENERATOR SET
for small air-cooled engines



Pumps, compressors, small industrial machinery, lawn care equipment, and golf carts are applications for this self-contained 12-v starter-generator for small air-cooled engines. Packaged unit consists of a heavy duty electric starter and generator with drive pulley, solenoid switch, voltage regulator, starter button, belt, and belt tightener on an L-section steel mount. It is available with or without the engine. • **Continental Motors Corp.**, Air Cooled Industrial Engine Div., 12800 Kercheval Ave., Detroit 15, Mich.

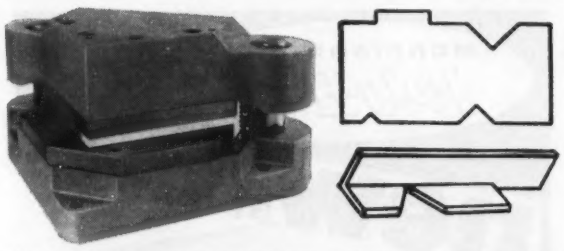
▲ For more details circle NED-405 M on enclosed inquiry slip ▲

RECHARGEABLE BATTERY
flashlight type has 250-cycle life



Nicad rechargeable flashlight battery cartridge fits all Size D two-cell flashlights. Removing its cap permits plug-in recharging in any 110-v ac outlet. Cartridge has a minimum life of 250 recharging cycles, each with a reported 50 per cent more continuous light than a standard battery. The hermetically sealed nickel cadmium battery recharges to full capacity in 14 hr. • **Gould-National Batteries Inc.**, Nicad Div., First National Bank Bldg., St. Paul 1, Minn.

▲ For more details circle NED-406 M on enclosed inquiry slip ▲



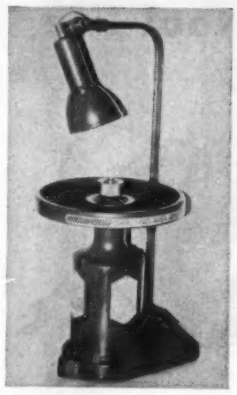
SELF CONTAINED NOTCHING UNIT FOR FLAT STOCK AND ANGLE NOTCHING BY TOOLSET.

For press brake or punch press operations. Models are available with 5½ inch shut height and 2 19/32 inch die height, or 8⅜ inch shut height and 3½ inch die height. Notch capacity up to 5 x 5 inches. Material capacity up to ¼ inch thick mild steel. Special radius or corner notches can be furnished. Write for catalog or quotation.

TOOLSET INC.
1413 MILITARY RD.
BUFFALO 17, N. Y.

▲ For more details circle NED-407 M on enclosed inquiry slip ▲

VERTICAL BENCH GRINDER
stroboscopic effect of light and holes in wheel make work visible

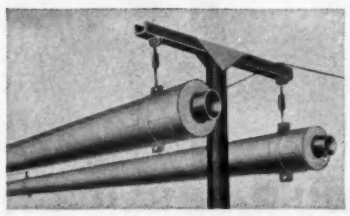


Metal-backed, organic-bonded grinding wheel of the Stroboscope grinder rotates in a horizontal plane, permitting work being ground on its bottom side to be seen through holes in the wheel. Stroboscopic effect of light and holes in wheel makes work visible. The operator using this vertical shaft bench grinder looks down at the work. Grinding on the side of the wheel aids in the generation of flat surfaces. Metal backing on the top side and a metal guard around the periphery afford protection to the operator.

Grinder is equipped with 8 x ½ x ½-in. 60-grit general purpose and 120-grit polishing wheels. Various grit sizes and abrasive types can be furnished. The 22-in. high grinder has a ⅓-hp, 3450-rpm, totally enclosed motor and lamp and post. Price is $89.50. • **A. P. de Sanno & Son, Inc.**, 422 Wheatland St., Phoenixville, Pa.

▲ For more details circle NED-408 M on enclosed inquiry slip ▲

PREFABRICATED PIPE SYSTEMS
insulated overhead and underground types use factory made components



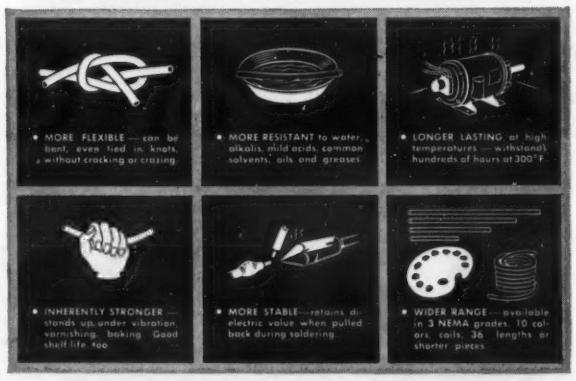
Overhead distribution of steam, hot water, process liquids, and refrigeration lines is handled by the Plasti-clad prefabricated piping system (shown). It consists of pipe and insulation covered with aluminum foil, over which are two wrappings of glass fiber cloth integrated within Plasti-clad material. Factory prefabricated system includes expansion loops, anchor units, elbows, and tees, ready for installation. Straight sections are made in 21 ft lengths and pipe joints are field welded or threaded. Materials for insulating and sealing field joints are furnished, and poles, hangers, and saddles are optional.

Plastic coated system for underground distribution consists of pipe and insulation covered by a spiral welded metal conduit. Protection against soil and stray current corrosion is provided by a 20-25 mil coating of cold cured epoxy, reinforced with glass fiber cloth. This material resists acids, alkalis, and salts and has high dielectric strength. The coating withstands 375° F and does not crack or check at low temperatures. Joints are field welded. • **Ric-wiL, Inc.**, Barberton, Ohio.

▲ For more details circle NED-409 M on enclosed inquiry slip ▲

Where can you use VARFLO?

(the highly flexible Class B Sleeving and Tubing that licks Class A in performance—equals it in price)



Cuts inventory, too! Superior to Class A insulation in performance—yet on a par with it in price—Varflo Sleeving and Tubing can be used economically for all Class A and Class B installations. This low-cost adaptability of Varflo enables many of our customers to achieve substantial savings in inventory. Available in NEMA Grades A-1 and B-1 tubing and Grade C-2 sleeving.

Perhaps Varflo can solve your insulating problems. Describe them in a letter—no cost or obligation for our recommendations. Samples available.

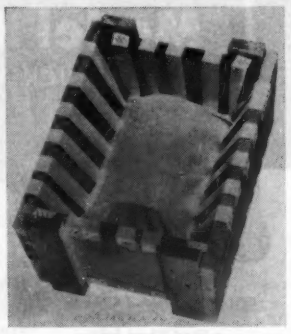
Varflex CORPORATION
Makers of Electrical Insulating Tubing and Sleeving

Approved for application under MIL-I-21557

510 W. Court St., Rome, N. Y.

▲ For more details circle NED-410 M on enclosed inquiry slip ▲

SUSPENSION PACKAGING METHOD
suspends item in web of vinyl-nylon fabric strips for impact protection

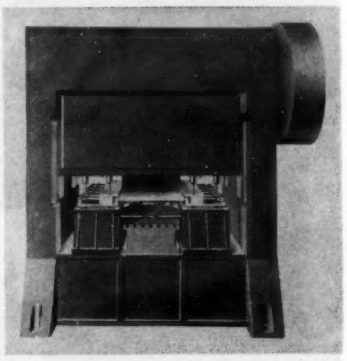


Simple interlacing which suspends an item in a web of fabric strips and minimizes impact delivered to the object throughout handling and shipment is basic principle of the Herculite Suspension System. This packaging method for hard-to-pack objects utilizes 18-oz Herculite 80, a material combining tough nylon with two layers of PVC plastic to form a strong, waterproof fabric. Tear strength in both directions exceeds 100 lb.

Shock isolation studies show the system affords a high degree of cushioning. System also incorporates full protection of item from water, dust, dirt, and other outside contamination. Exterior container can be rigid wood, glass fiber, or metal. Interlacing "fingers" are fastened to walls of container, and the object is suspended in shock-resistant, lightweight "hammock." Herculite fabrics are fire retardant, are available in many code colors, and can be imprinted for identification. • **Herculite Protective Fabrics**, 661 Fourth St., Newark 7, N. J.

▲ For more details circle **NED-411 M** on enclosed inquiry slip ▲

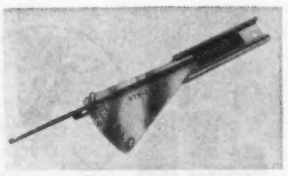
STRETCH FORMING ATTACHMENT
for use on standard draw presses



Stretching metal independently and prior to the die forming operation is the principle utilized by a stretch forming attachment for standard draw presses. Immediately after the previously stretched sheet is brought down over the die by the press movement, the upper die closes over the lower die to finish the work. Hydraulic stretch heads remove any tendency to trap metal and wrinkle. When the work cycle is completed stretch tension is relieved and the upper die is withdrawn. Prior metal stretching makes the part strong and hard. Amount of stretch is controlled and may be varied to suit the shape or hardness of the metal. The process is applicable to aluminum alloys, stainless steel, titanium, and other thermal resistant alloys. In many cases, the need for heating the material before forming is eliminated. • **Cyril Bath Co.**, 32310 Aurora Rd., Solon, Ohio.

▲ For more details circle **NED-412 M** on enclosed inquiry slip ▲

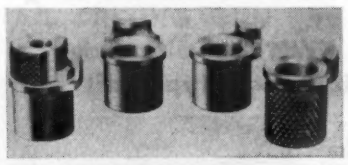
SPRING TENSION GAGE
has 0 to 1200-gram range



Tension of relay or other springs is accurately determined by this STG-2-Z 0 to 1200 - gram range spring tension gage. Range is shown in 100-gram steps as well as ounces and pounds avoirdupois from 0 to 2¾ lb. Previous models had a range up to 150 grams only. Scale is calibrated on front and back and can be read left to right, as well as right to left. Unit has a 6¾ in. long frame and is 9½ in. long over-all. Price is $8.40. • **P. K. Neuses, Inc.**, 511 N. Dwyer St., Arlington Heights, Ill.

▲ For more details circle **NED-414 M** on enclosed inquiry slip ▲

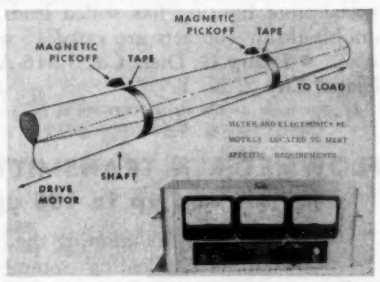
DRILL BUSHING LOCK LINERS
eliminate bushing lock screws



Lock screws required to secure slip renewable type drill bushings in place are unnecessary with Un-A-Lok lock liners. They have ground or unground outside diameters, or can be ordered with Delt-A-Liner OD's for use in plastic tooling. A finger-tip twist either locks the bushing in the liner, or removes it for quick interchange. During drilling, bushing is locked securely in the liner by rotation of the drill. • **American Drill Bushing Co.**, 5107 Pacific Blvd., Los Angeles 58, Calif.

▲ For more details circle **NED-415 M** on enclosed inquiry slip ▲

HORSEPOWER METER
measures 0.01 to 20,000 hp

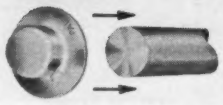


Torsional deflection and rotational speed of a shaft are measured magnetically and multiplied electronically by this horsepower meter. Torque and rotational speed are also displayed on self-contained meters and are available as analog voltages. Accuracy is within ±5, 3, and 2 per cent, respectively, for these values. The transistorized meter has been used on 0.5 to 23-in. diameter shafts transmitting from 0.01 to 20,000 hp. Larger sizes can be accommodated. It is input rated at 20 w, 115-v, 60 cps, single-phase for temperatures from −20 to 130° F and vibration from 5 to 200 cps at 3 g. Mechanical followers are available to remove effect of large radial and axial shaft motion. • **Sierra Research Corp.**, Box 22, Buffalo 25, N. Y.

▲ For more details circle **NED-416 M** on enclosed inquiry slip ▲

Investigate this wide choice of
PUSHNUT® FASTENERS
to speed up and cut costs of Assembly

• SIMPLY PUSH ON plain rods, axles, studs or pins.
• Eliminate Tapped Nuts, Threaded Parts, Cotter Pins, Drilling Holes, Annular Grooving.
• Easy, fast assembly with manual tools or high speed air hammers.
• Tight, vibration-proof grip.



WASHER CAP TYPE

Style PW. Covers rod ends with smooth, rugged cap. Made of one-piece, heavy gauge spring steel with powerful gripping action. Always align perfectly. Various designs and finishes in sizes for 3/16", 1/4", 5/16", 3/8", 7/16" and 1/2" dia. unthreaded rod, wire and studs.

Style PC — **ACORN TYPE** — **Style PK**

Pleasing, decorative appearance and strong spring grip for fastening or covering ends of rods, studs, pins, etc. Closed and open end styles. Sizes from .120" to .312" dia.

ROUND FLAT TYPE

Style PS. Low-cost, space-saving spring steel retainers push on plain rod or axle, providing strong, firm retention of parts, seated or unseated. Sizes for 1/16", 3/32", 1/8", 3/16", 1/4", 5/16", 3/8" and 1/2" dia. rod.

Style PV. Light duty retainer with flexible spring gripping teeth for easy assembly with fingers. For rod dia. 1/4", 5/16", 3/8" and 7/16".

ARCHED RECTANGULAR TYPE

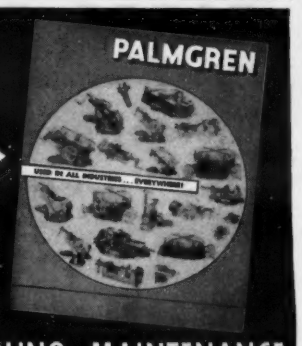
Style PH. Push on unthreaded studs to assure tight, vibration-proof assembly of ornaments, medallions, nameplates and other parts. Grip tight on hard chrome studs. Sizes for 1/16", 5/64", 3/32" 1/8" and 5/16" dia. studs.

WRITE for free samples and data, stating type, size and application

PALNUT® THE PALNUT COMPANY
45 Glen Road, Mountainside, N. J.
DIVISION OF UNITED-CARR FASTENER CORPORATION
Canada: P. L. Robertson Mfg. Co., Ltd., Milton, Ont.
LOCK NUTS and FASTENERS

▲ For more details circle **NED-418 M** on enclosed inquiry slip ▲

WRITE NOW FOR THIS
FREE CATALOG
ON WORK HOLDING TOOLS FOR PRODUCTION, TOOLING, MAINTENANCE



Drill press vises, angle vises, swivel machine vises, rotary tables, lathe milling attachments, production vises, heavy duty angle vises, and adjustable angle plates are illustrated and fully described in the New Palmgren Catalog. This is the only complete line of work holding devices available anywhere. Designed for production, tooling, and maintenance work, there are 68 different models and types to choose from. Vise jaw sizes are from 1½" to 8". Ask for your copy of this FREE Catalog No. 205 today. The complete line with details and prices are shown.

PALMGREN PRODUCTS
by CHICAGO TOOL AND ENGINEERING CO.
8378 SOUTH CHICAGO AVE. • CHICAGO 17, ILL.

▲ For more details circle **NED-419 M** on enclosed inquiry slip ▲

JONES #3200
Hand Tachometer
BROAD RANGE
50 — 5,000 R.P.M.
with stop button
assures better production

HIGHER OUTPUT — QUALITY CONTROL obtained by maintaining proper machine speeds. Also helps avoid breakdowns by detecting irregularities.
CARRY IT FROM JOB TO JOB and keep it handy for quick, accurate tests. Choice of readings in R.P.M., F.P.M., etc.
GUARANTEED ACCURACY—superior construction, trouble-free. Unaffected by moisture, temperatures, electric currents.

Many other Portable and Stationary Models, indicating Speeds between 50 R.P.M. and 50,000 R.P.M., are available.

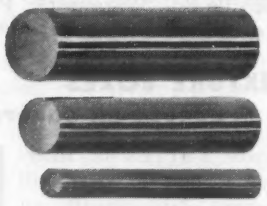
Write for catalog H

JONES MOTROLA CORP.
Stamford, Conn.

▲ For more details circle **NED-413 M** on enclosed inquiry slip ▲

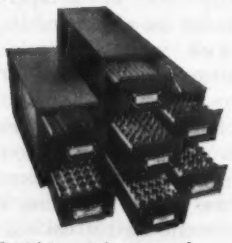
DELUXE
PLUG GAGES
by DUNDICK

ONLY **$1.25** per gage in lots of 10 or more in your choice of sizes



THE GAGE WITH A MILLION USES
Core Pins • Gages • Perforators • Set-up Pins • 2" Long
721 sizes—from .030 to .750

FREE CABINETS
Free cabinets included at no extra cost with each complete or sectional order of the new Dundick DeLuxe Gages.
• Each cabinet complete with lacquered hardwood block. Contains properly identified and sized holes to hold pins.



GUARANTEED ACCURACY within a tolerance of plus or minus fifty millionths.

DUNDICK TOOL WORKS, INC.
3410 West 31st St.
Chicago 23, Illinois

▲ For more details circle **NED-417 M** on enclosed inquiry slip ▲

VIBRA-WASHER
...THE COMPLETELY NEW AUTOMATIC PARTS WASHER AND METAL CONDITIONING MACHINE

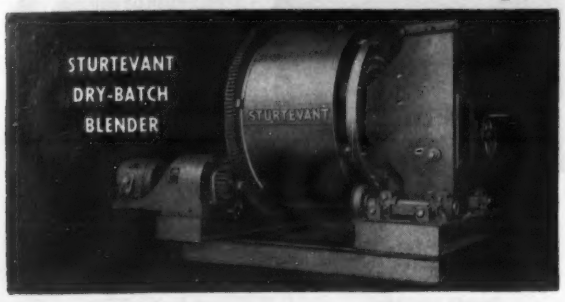
• Labor saving
• Automatic unloading
• For single or multi-stage operations
• No nesting of parts during cleaning or conditioning cycle
• Adjustable capacities to 10,000 lbs. per hour

The versatile new Simplicity VIBRA-WASHER, revolutionary machine for washing and conditioning of small metal parts, stampings and castings, employs a vibrating work carrier that automatically conveys parts through cleaning or conditioning bath. Solution is forced around parts, even into blind drillings and slots. In single stage, VIBRA-WASHER removes chips, oil and grease quickly . . . economically. In multi-stage, several units in line will provide cleaning, rinsing and phosphating, eliminating "between-stage" handling. Write today for Bulletin 107, to: Industrial Washer Division.

Simplicity TRADE MARK REGISTERED
212 ENGINEERING COMPANY • DURAND 15, MICH.

▲ For more details circle **NED-420 M** on enclosed inquiry slip ▲

BLENDING COSTS cut 2 ways!



1. PRODUCTION SPEEDED UP BY 4-WAY MIXING

2. SHUT-DOWNS SHORTENED BY "OPEN-DOOR" DESIGN

Batches from 500 to 40,000 pounds are completely blended regardless of varying weights, densities or fineness of different ingredients. No dust loss!

Four different vertical and lateral mixing actions do the job in minimum time. Single lever control of single gate speeds loading and discharging.

"Open-Door" accessibility for quick, easy cleaning and maintenance *plus* 75-year-tested rugged construction add up to more output per machine-year.

Write for Bulletins on Sturtevant Batch Blenders and other custom-built equipment listed below. STURTEVANT MILL CO., 114 CLAYTON ST., BOSTON 22, MASS.

STURTEVANT
Dry Processing Equipment
The "OPEN-DOOR" to lower operating costs over more years
CRUSHERS • GRINDERS • MICRON-GRINDERS • SEPARATORS
BLENDERS • GRANULATORS • CONVEYORS • ELEVATORS

▲ For more details circle NED-421 M on enclosed inquiry slip ▲

PARTS FEEDING BY AUTOMATION

...feeds dollars into your profit column

In costing today's high speed production it makes sense if you increase production without adding direct labor, the dollars show up in profit . . . fast!

Since AD equipment is self liquidating with labor savings it also adds dollars in earnings all along the line.

Let any one of AUTOMATION DEVICES' sales engineers, located throughout the country, help you streamline your production facilities and you'll add dollars to your profit.

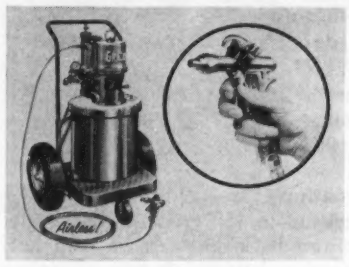
Send for informative literature and the name of nearest AD representative.

PEECO & VFC DIVISIONS
. . . TWO GREAT NAMES IN PARTS FEEDING

AUTOMATION DEVICES INC.
ERIE, PENNSYLVANIA

▲ For more details circle NED-422 M on enclosed inquiry slip ▲

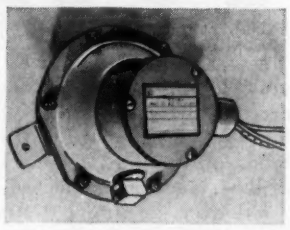
AIRLESS SPRAY GUN & TIP for wide range of viscosities



Redesigned for the airless Hydra-Spray process (NED, Feb. '60), the Golden gun has a shorter over-all length, center balanced weight, and a swivel at the base of the handle for maneuverability in coating flat or intricately shaped surfaces. A lighter trigger pull and quick pop-action shutoff are other features. Also contributing to the controlled application of a wide range of viscosities and mil thicknesses is the Fine Finish tip. It provides a good lapping pattern and assures precise final finishes on furniture, appliances, and automobiles. • Gray Co., 60 11th Ave., N.E., Minneapolis 13, Minn.

▲ For more details circle NED-423 M on enclosed inquiry slip ▲

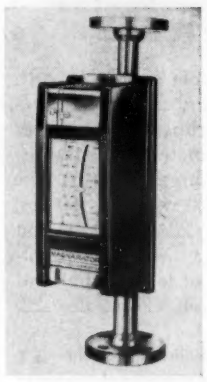
LOW PRESSURE SWITCH is 15-amp diaphragm type unit



Responsive to pressures as low as 1/4 in. of water, Catalog 130D-HA5 diaphragm type switch has an on-off differential of 0.1 in. when supplied with a 2-in. water column range. It can be used as a vacuum or differential control for air or gases, and for air or inert gases on pressure service. On special order, it can be used for liquids, water, or gases. Simple screw adjusts pressure settings in the field. Switches are offered with ranges of 2, 4, 8, and 20 in. water column. The dust-tight splashproof housing has sealed leads. The single-pole double-throw contacts are rated 15 amp on 120 to 250 v ac. • **Henry G. Dietz Co.**, 12-16 Astoria Blvd., Long Island City 2, N. Y.

▲ For more details circle NED-424 M on enclosed inquiry slip ▲

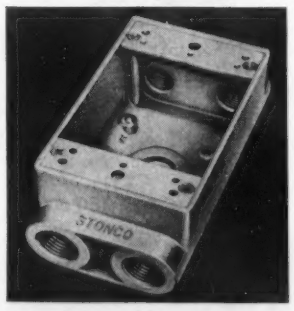
FLOWMETER & TRANSMITTER for air and up to 100 gpm of water



Combining the functions of an indicating rotameter and a pneumatic transmitter, this Magnarator measures liquid and gas flows accurately within 1 per cent over its 10 to 1 range. It is connected vertically in the line with flow upward. The float in the metering tube is connected magnetically to a rotating follower in the pneumatic transmitter. A dual reading 4-in. vertical scale indicates the flow rate and the transmitted pneumatic signal which is linear. A horizontal scale shows the float position independently. It can be used with a 1/2 to 2-in. diameter metering tube and covers flow equivalent to 1 to 100 gpm of water or 4 to 400 scfm of air. Steam jacketed and high pressure models and an extension design for meters larger than the 2-in. pipe sizes are available. • **Fischer & Porter Co.**, 676 Jacksonville Rd., Warminster, Pa.

▲ For more details circle NED-425 M on enclosed inquiry slip ▲

FIXTURE BOXES accept all covers and wiring devices



Three series of interchangeable FS boxes will accommodate virtually all cover plates and wiring devices. Included are weatherproof boxes taper-threaded for rigid conduit, boxes with rivet-point locking set screws for thin-wall E.M.T., and specification-grade types with deluxe compression fittings. Boxes are diecast aluminum with grounding screws, inside mounting knockouts, back drainage feet to prevent wall streaking, and Stonco exterior hubs for ample wiring space. These UL-approved boxes are made in 1/2 and 3/4-in. sizes in ten hub styles, with or without additional back-holes. • **Stonco Electric Products Co.**, 333 Monroe Ave., Kenilworth, N. J.

▲ For more details circle NED-426 M on enclosed inquiry slip ▲

2000, 2500 and 3000 lb. capacity 4½" lift

- All-Welded Ribbed Construction
- Short Wheel Base—Maneuverable
- Simplified Hydraulic Unit
- "Flying Saucer" Pallet Entry
- Overload Protection
- Adjustable Lowering Control

MAC SAYS, "This new BARRETT HX is different from any hand pallet truck you ever used. It's loaded with features never before available in a truck of this type. And priced surprisingly low! Get the money-saving facts. Write for Bulletin 5511—*today!*"

BARRETT-CRAVENS COMPANY
650 Dundee Road, Northbrook, Illinois.
Representatives in All Principal Cities

BARRETT

One man does more than 3 or 4—with a Barrett

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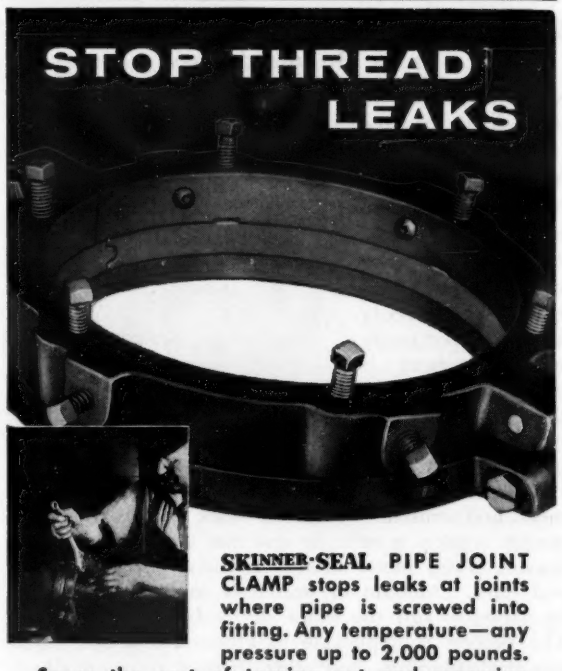

SKINNER-SEAL PIPE JOINT CLAMP stops leaks at joints where pipe is screwed into fitting. Any temperature—any pressure up to 2,000 pounds. Saves the cost of tearing out and renewing leaky fittings. Prevents shutdowns. Has served industry 60 years. Stocked by most distributors.

M. B. SKINNER CO., South Bend 21, Ind.—Established 1898

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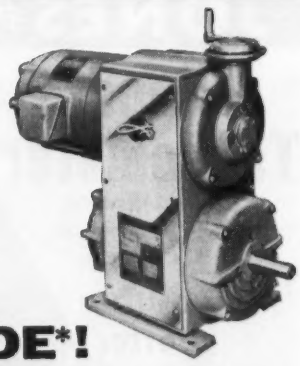


The new ALLISPEDE*!

The mechanical adjustable speed drive that can be adapted in the field!

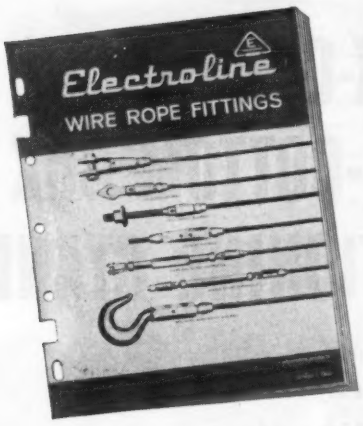
A wrench and screwdriver are all the tools you need to change the ALLISPEDE DRIVE from an upright to a horizontal drive—for floor, wall, or ceiling mounting. Feet, end brackets, control hand wheel, conduit box, and output shaft can be positioned to fit space requirements.

Ideal for equipment and operations requiring economical but precise adjustable-speed control. It's virtually maintenance-free. Features full four-bearing belt support for longer belt life; oversize cartridge bearings; internally-lubricated splined shaft; corrosion-resistant enclosure. Sizes 1 HP and up; speed variations up to 8:1. Write for Bulletin 3600, The Louis Allis Co., 436 East Stewart St., Milwaukee 1, Wisconsin. A9D-119

*ALLISPEDE is a trademark of The Louis Allis Co.

LOUIS ALLIS

▲ For more details circle NED-429 M on enclosed inquiry slip ▲



How To REDUCE WIRE RE-ROPING COSTS

Write for this catalog

In it, you'll find fittings for fastening wire rope, cable, or strands so they hold fast. Regardless of the type you choose, all effectively dampen vibration stresses—reduce frequency of re-roping—and eliminate loose or frayed wire troubles. Easily installed with ordinary tools. Highest holding strength of known fittings.

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Electroline PRODUCTS
THE SUPERIOR SWITCHBOARD & DEVICES COMPANY
Box 590, Canton 1, Ohio

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your key to the perfect choice of CENTRIFUGAL PUMPS

If you need centrifugal pumps with these characteristics, this reference book is for you: • PRESSURES: to 21 psi in single stage pumps; to 70 psi in multi-stage types. • FLOWS: capacities to 70 gpm in single-stage pumps, to 10 gpm for multi-stage models. • INSTALLATIONS: a wide range of transfer, recirculation, feed, boost and filter-pumping applications.

All told, 50 different models are described in full—and you get a wealth of technical data as well. Write for new catalog 130 now!

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100 SKIFF STREET, HAMDEN, CONN.
WEST COAST OFFICE 4203 Spencer St., Torrance, Calif.

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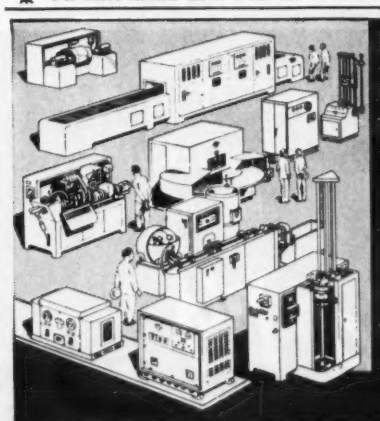

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MOTOR GENERATOR

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• Over 5,000 installations.
• Over 15,000 heating applications resolved in our customer service laboratories.
• This outstanding experience and know-how qualify us to prescribe the techniques and equipment best suited for your requirement.
• Write for New 56-page Catalog of exclusive features, facts and specifications.

INDUCTION HEATING CORP.
181 WYTHE AVE., BROOKLYN 11, N. Y.

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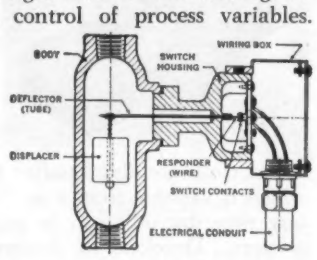
SENSING DEVICE
detects, controls process variables

An unusual Wire-in-Tube Element transmits motion through a pressure-tight wall in this sensing device for detection and control of process variables. Element consists of a flexible, curved tube containing a spring wire. Deflection of the end of the tube by change in level or flow rotates the wire, which in turn can indicate the change or operate a switch. Applications include sensing of changes in level, flow, temperature, or density, or leakproof transmission of rotary motion. • **Yarnall-Waring Co.**, 102 E. Mermaid Lane, Philadelphia 18, Pa.



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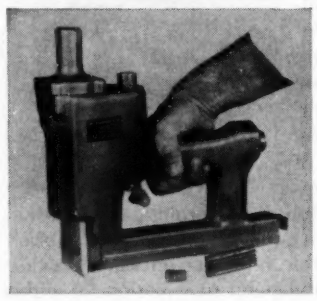
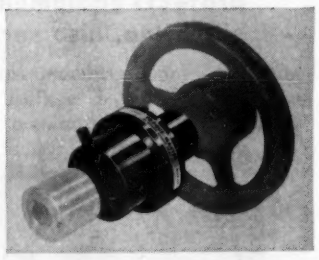
NAIL DRIVING GUN
pneumatic tool holds 120 nails



Sections of wood can be joined by the Nailgun, a portable pneumatic tool developed for use in furniture, box, cabinet, and other wood product manufacture. Corrugated nails are countersunk to eliminate tearing of sanding discs and belts. The gun holds 120 nails, supplied in a strip, and drives them rapidly, straight into the wood. They can be driven into soft pine or hard oak by adjusting a screw on the air regulator. • **Saurenman Co.**, 1517 N. Potrero Ave., El Monte, Calif.

▲ For more details circle NED-434 M on enclosed inquiry slip ▲

TORQUE LIMITER
disengages upon preset overload

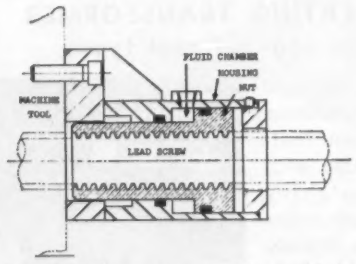


Torque-Master XB-150 torque limiter is adjusted manually to release and sound an alarm at any predetermined torque setting from 10 to 150 lb-ft. It can also be locked in positive drive with no release. Unit prevents damage to motors and drives by instantly disengaging power in the event of overload or jam-up, slipping only when a jam-up occurs and re-engaging when the overload is relieved. Torque output is constant regardless of temperature, weather, oil, or abrasive conditions. Interchangeable bushings are used for ½ to 1 7/16-in. bores. Single, double, and triple groove sheaves and sprockets fit without machining. Timing belt sheaves and rotating members are also easily mounted. • **Roberts Aircraft Engine Co.**, Torque-Master Div., 203 N. Lake St., Burbank, Calif.

▲ For more details circle NED-435 M on enclosed inquiry slip ▲

HYDRAULIC NUT
has automatic take-up

Usable in screw driven machines and mechanisms, this hydraulic take-up Acme thread nut eliminates backlash, compensates for excessive wear, and eliminates vibration, chatter, and resulting defective surface finish. The nut also provides a continuous breaking force to prevent undesired rotary motion, and it securely locks the elements in position as long as the power is not applied. Hydraulic pressure continuously maintains contact between the nut and the screw threads without excessive friction. Basically, the assembly is a pair of bronze nuts, one of which is locked. The other is forced in an opposite axial direction by hydraulic fluid pressure. Thus, a wedging or preloading action is exerted on the lead screw. • **Tracer Control Co.**, 595 E. Ten Mile Rd., Hazel Park, Mich.



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Your Problems in moving AIR DUST FUMES AND MATERIALS easily solved with FLEXAUST® HOSE

Both Flexaust hose and Portovent retractable duct are made of neoprene coated fabrics and wire reinforced, and have service-proven their dependability and durability in thousands of installations since 1938. Easy to cut, couple, connect, reuse, relocate, they can be installed in minutes to give years of service. Sizes from 1¼ to 36" i.d.

WRITE TODAY FOR DETAILS
"Distributors in all principal cities"
THE FLEXAUST COMPANY
Dept. NED-12 100 Park Avenue, New York 17, N. Y.

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NEW REVOLUTIONARY DESIGN FOR LOW COST MACHINE MOUNTINGS

FABCEL Pads
Patent Applied For

Unsurpassed performance and endurance! Installation is easy! Just cut to shape and size you desire, from standard 18" x 18" squares; slip into position and then check the difference!

No bolts, cement or screws. FABCEL'S engineered, recessed suction cells lock machine to floor. FABCEL Pads also reduce noise and job rejects.

Write for new catalog

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1195 Adams Street, Boston 24, Mass.
Representatives in Principal Cities
In Canada: International Equipment Co., Ltd., Montreal, P.Q.
- made by the makers of Fabreeka -

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BETTER FAST WHITEPRINTER at LOWEST PRICE

FOR INDIVIDUAL OFFICE USE

Finger tip speed control for whiteprints, sepias and foils
Fastest Diazo Lamp on market
Priced below all other makes
Rotolite prices start at $129.50

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ROTOLITE SALES CORP., Stirling, N. J.
Please send literature on Rotolite "Expeediter"

Name_____
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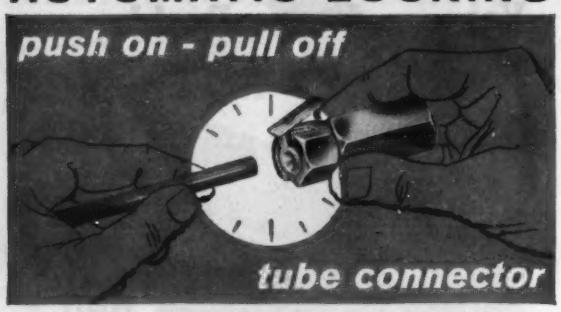
AUTOMATIC LOCKING



Instantly connects pressure and vacuum lines to straight end tubing

Simply push the Connector over end of tubing and press to "stop" position. This **AUTOMATICALLY** locks tubing into place for a leak-proof seal. To unlock, press Thumb Pad and pull Connector off. For any pressure to 1000 psi; vacuum up to 25 microns. Rugged, simple, fool-proof, it saves time and labor. One end tapped for inlet connection. Stock sizes for 1/8" to 1 1/2" OD tubing. Other sizes to order. Write for Catalog and prices.

for AIR WATER, STEAM, FREON, etc.

mp MECHANICAL PRODUCTS CORPORATION
1724 West Hubbard Street, Chicago 22, Illinois

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POWRARM IN . . . PRODUCTION UP! UP! UP!

FRIDEN CALCULATING MACHINE CO. INCREASES WORKER EFFICIENCY WITH PowRarm! By using Wilton PowRarm Work Positioners as the basic unit of adjustable assembly boards, Friden increases production through a savings of operator time, motion, and assembly space. PowRarms allow 360 degree rotation of the new boards, and workers can incline them at various angles. May be mounted on benches, conveyors, or floor stands as illustrated. Many firms use PowRarm for inspection, servicing, soldering, assembly, and any work positioning operation. Ask your Wilton distributor for a demonstration.

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NED-120

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SAVE SPACE AND REDUCE COSTS WITH AURORA®

VERTICAL END-SUCTION PUMPS

Capacities to 1800 GPM
Heads to 320 Feet

Close-coupled, vertical mounting design provides the extreme compactness that is so important where space is critical. Flanged suction mounting cuts piping costs and eliminates separate foundation arrangement. Optional discharge arrangement permits the most simplified installation. Also available in horizontal close coupled or flexible coupled models. Write for Bulletin.

AURORA Always PUMPS

AURORA PUMP DIVISION
THE NEW YORK AIR BRAKE COMPANY
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LOCAL DISTRIBUTOR IS LISTED IN THE YELLOW PAGES OF YOUR PHONE BOOK

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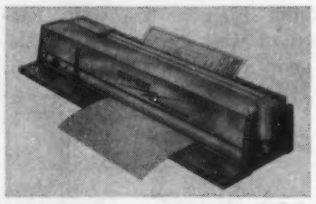
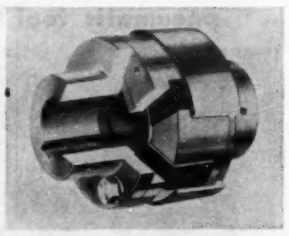
DIAZO DRY DEVELOPER
makes 42-in. prints of any length



Continuous action Blu-Ray developer for diazo papers and materials is available in three models, the largest developing prints up to 42 in. wide by any length. Foils, sepias, and sensitized cloth are also handled by the machine, speed of which is variable from 4 to 72 ipm. The portable rotary type dry unit can be used with all diazo whiteprinters. Developer is charged by tipping up a 16-oz plastic bottle of ammonia. Venting is optional. Largest model is priced at $137.50. • **Reproduction Engineering Corp.**, 613 Plains Rd., Essex, Conn.

▲ For more details circle NED-443 M on enclosed inquiry slip ▲

FLEXIBLE COUPLINGS
two types for 1 3/8 to 8 1/2-in. bores



Both independent rotation and radial removal of connected machinery are possible with standard duty Type CQ and heavy duty Type HQ flexible couplings. Individual free-floating load cushions of material suited to the application transmit the full load through compression, without wear on the metal jaws or need for lubrication. Pulling a removable jaw ring outward provides enough clearance for independent rotation of either coupling end. Type CQ couplings are made with maximum bores from 1 3/8 to 5 1/2 in. and range from 2.58 to 156 hp at 100 rpm. Type HQ units have 1 3/4 to 8 1/2-in. maximum bores and 7.77 to 810-hp ratings at 100 rpm. • **Lovejoy Flexible Coupling Co.**, 4891 W. Lake St., Chicago 44, Ill.

▲ For more details circle NED-444 M on enclosed inquiry slip ▲

VIBRATION MONITOR
protects equipment against excessive vibration, also serves as balancer

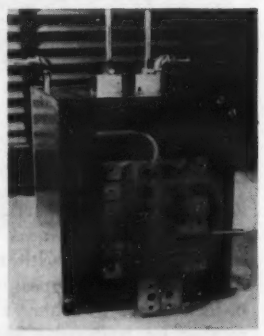
Machines, fans, grinders, turbines, and other equipment are protected against damage from excessive vibration by this resonance type electronic vibration

monitor. It flashes a signal or stops the machine if safe limits of vibration amplitude are exceeded. It is sensitive to 0.000002-in. vibration amplitude.

With an accessory plug-in strobe light attachment, it becomes a portable balancer to be used in correcting the condition causing the vibration. A tuneable pick-up filters out extraneous vibrations, picking upon only those frequencies for which it has been preset. A channel selector accessory (right) reads vibrations at several points from individual pick-ups. As a go-no go gage it tests equipment with rotating parts having a vibration limit. • **Stewart-Warner Corp.**, Industrial Balancer Dept., 1826 Diversey Parkway, Chicago 14, Ill.

▲ For more details circle NED-445 M on enclosed inquiry slip ▲

INDUCTION HEATING TRANSFORMER
replaces six conventional types



Effective operation when a variety of parts are processed on a single induction heating unit is obtainable with this impedance-matching transformer. Used with radio-frequency induction heaters, the transformer provides from one to six different primary-to-secondary turns ratios by merely changing faceplates. Changeover time is minimized. Also available is a 1-to-4 secondary turn transformer for use on 3 to 10 kc equipment. • **Detroit Induction Heating Co.**, 12120 Cloverdale, Detroit 4, Mich.

▲ For more details circle NED-446 M on enclosed inquiry slip ▲

WORK-O-MATIC DROP-BOTTOM BOX A POSITIONING STAND

Partners in handling Simplification

For details, request Catalog No. 89.
The Union Metal Manufacturing Company,
Canton 5, Ohio

UNION METAL
Material Handling Equipmen

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Electrical Protection goes MODERN with Buss Fu
in the New Service Center of the Public Service Co. of Colorad

This recently completed service center at 2701 West 7th Ave., has BUSS and FUSETRON Fuses installed throughout the entire electrical system.

The modern trend is to fuses because — no other type of protective device can equal fuses for safe, dependable protection against ruined equipment, fire hazards and needless down-time.

MAXIMUM SAFETY
The interrupting rati BUSS Hi-Cap Fuses is 20 amp. rms symmetrica for FUSETRON dual-ele Fuses it is 100,000 amp.

LIFETIME DEPENDABILIT
Unlike mechanically ated devices, fuses requi maintenance or recalibrati they are always ready to tion the instant trouble o

THERE IS A BUSS OR FUSETRON FUSE FOR EVERY ELECTRICAL

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SKF and all the authorized SKF distrib wish you a very

Merry Christmas

Spherical, Cylindrical, Ball, Tyson Tapered and REED Mi

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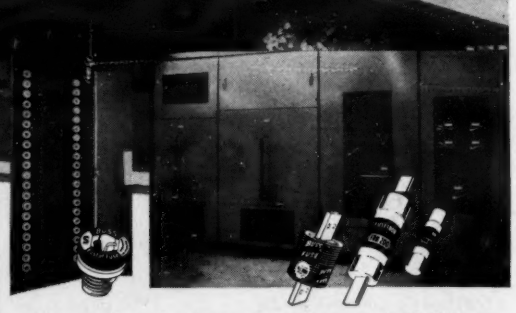
OWNER: Public Service Company of Colorado
ARCHITECTS: G. Meredith Musick & Clayton C. Musick
ELECTRICAL CONSULTANTS: Swanson, Rink & Associates
ELECTRICAL CONTRACTOR: Howard Electric Co.
TOTAL FLOOR AREA: 77,400 square feet.



Primary voltage at underground transformer vault; 13,800 volts, 3phase, 4 wire. Secondary voltage; 120 and 208—3 phase, 4 wire.

Main Power Panels: Protected by 2,500 Amp. BUSS Hi-Cap fuses.
Main Lighting Panel: Protected by 1,500 Amp. BUSS Hi-Cap fuses.
All Power Distribution Panels: Equipped with FUSETRON dual-element fuses.
All Lighting Distribution Panels and Heating Panels: Protected by Buss FUSTAT fuses.

For more information on: Buss FUSTAT fuses ..... write for bulletin SCPS; FUSETRON dual-element fuses write for bulletin FIS; BUSS Hi-Cap fuses ..... write for bulletin HCS

EED. Bussmann Mfg. Division, McGraw-Edison Co., St. Louis 7, Mo.

448 M on enclosed inquiry slip ▲

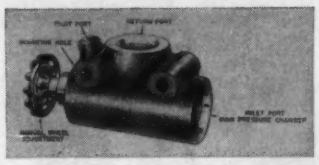
5939

EVERY TYPE—EVERY USE
SKF®
SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
*REG. U.S. PAT. OFF.

niature Bearings

449 M on enclosed inquiry slip ▲

FLOW RELIEF VALVE
controls hydraulic system pressure



Readily adjusted with a self-locking handwheel knob, this flow relief valve is usable for flow relief, sequence, or by-pass service. It accurately controls hydraulic system line pressure by responding instantly to surges in rate of flow. When an external connection is used to bring the return flow from the pilot valve to an external port, it can be used as a sequence, unloading, or dump valve, or for remote location of the pilot. Pressure regulation is constant from cracking to full open, with a differential of less than 100 psi from trickle to full flow and less than 50 psi between cracking and closing. Capacities with straight or pipe thread ports are 30 and 80 gpm. • **Fawick Corp.**, Fawick Hydraulic-Electronic Div., 9919 Clinton Rd., Cleveland 11, Ohio.

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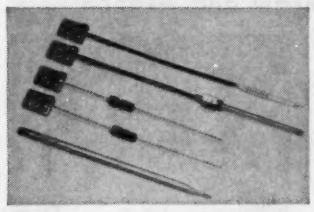
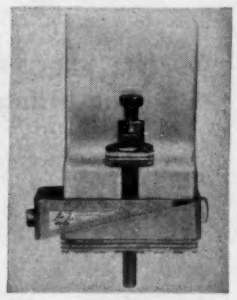
MINIATURE THERMOCOUPLES
measure gases, liquids, semisolids



Four Thrift/Therm miniature thermocouples have rapid response and are small and flexible enough for multiple application in small spaces. The low priced units will measure the temperature of any medium, including gases, liquids, and semisolids, over a 0 to 2000° F range. All have welded junctions. Trial kits are available for $12.95 in chromel alumel, iron constantan, and copper constantan. • **Harco Laboratories, Inc.**, 77 Olive St., New Haven, Conn.

▲ For more details circle **NED-451 M** on enclosed inquiry slip ▲

MACHINE TOOL MOUNT
designed to control vibration

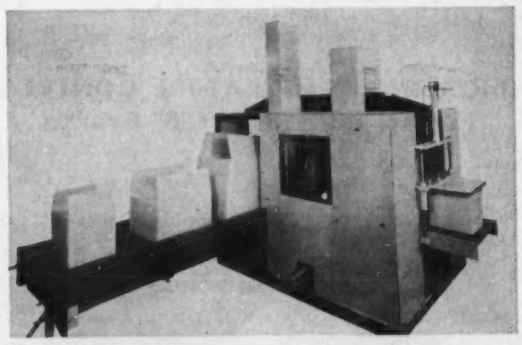


Vibration is reduced up to 85 per cent by the Bolt-Thru Wedgmount machine base. The mount affords precise leveling by means of double wedge construction. Compact unit effectively absorbs vibration, shock, and noise from machines which must be bolted to the floor to comply with safety codes. • **Clark, Cutler, McDermott Co.**, 8 W. Central St., Franklin, Mass.

▲ For more details circle **NED-452 M** on enclosed inquiry slip ▲

CARTON CLOSING MACHINE
seals varying sizes of cartons at speeds of up to 12 per minute

Automatic and almost instant adjustment to varying carton sizes is featured by this Union-Camp K & M Randomatic Case Sealer which operates at up to 12 cor-



rugated cartons per minute. Machine seals the top and bottom of a 30 x 20 x 12-in. box, then regulates itself to close a 10 x 8 x 4-in. box next in line. It applies a thermoplastic sealant which sets in less than 3 sec.

Filled cartons enter machine on a conveyor with bottom flaps folded. Tops flaps are folded and box is held under pressure on its way to the sealing section. In this section, pressure on both top and bottom flaps is relaxed and sealant applicators are inserted. Upon their withdrawal, flap pressure is once again applied as cartons move to discharge end of machine. Floor space occupied is 7 x 5 ft. • **Union Bag-Camp Paper Corp.**, 233 Broadway, New York 7, N. Y.

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FOR INDUSTRY OR HOME-CRAFT 8" TILT ARBOR SAW
BUY DIRECT FROM FACTORY

COMPLETE AS SHOWN—LESS BLADE
NOW $14.85 WAS $29.95

5/8" NEW DEPARTURE
BALL BEARING SPINDLE
PRECISION GROUND CAST IRON TABLE

Ideal for light factory work — excellent for the home workshop — that's the new Model 590B 8" TILT ARBOR SAW. Over 300,000 sold already! Does everything same as saws costing 4 times as much — cross cuts, rips, bevels, mitres, dadoes, cuts compound angles. Adjustable depth of cut: 0" to 2¼". Blade tilts to 45°. Heavy duty all cast iron and steel construction. Precision ground cast iron table. Sealed NEW DEPARTURE ball bearings never need lubrication. Price includes massive cast iron mitre gauge and patented motor drive that fits any motor. All parts and labor guaranteed 10 years.

SPECIAL BARGAIN . . . This saw is our 1960 Model — *brand new* — shipped in factory sealed cartons. Sold and guaranteed from factory to you at fantastically low price.

MONEY BACK GUARANTEE . . . This saw and parts are guaranteed 10 years! Try it for 10 days. If not completely delighted — FOR ANY REASON — return for immediate refund. Order Model 590B. *SENT EXPRESS COLLECT—Send check or M.O. $3.00 deposits on C.O.D.'s • Open account to rated firms*

AMERICAN MACHINE & TOOL CO.
ROYERSFORD 16, PA.
Our 30th Year Manufacturing Quality Power Tools
Pennsylvania residents add 4% sales tax

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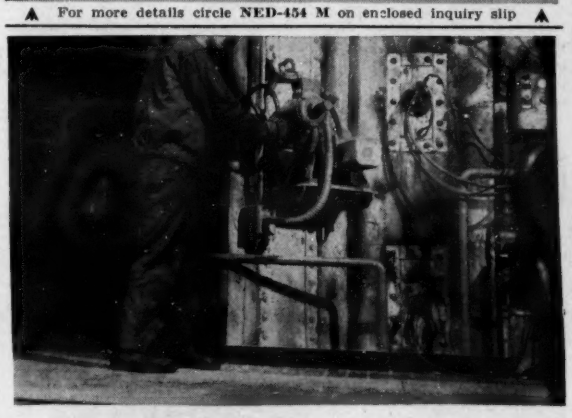

Sure footing . . .
A.W. ALGRIP abrasive flooring

Heavy oil occasionally spills on this platform at the Schuylkill Station of the Philadelphia Electric Company, but A. W. ALGRIP helps prevent accidents by providing assured footing.

A. W. ALGRIP is produced by Alan Wood Steel Company by a patented process in which an abrasive is embedded to a controlled depth. It becomes an integral part of a tough steel plate.

A. W. ALGRIP can be used as independent flooring or as flooring overlay. Approved for Safety by Underwriters' Laboratories. Write for Bulletin AL-S2.

ALAN WOOD STEEL COMPANY
Conshohocken, Pa.

Also manufacturer of A. W. Super Diamond Rolled Steel Floor Plate.

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ALL DIGITS CAN BE READ FROM ANY ANGLE
IN-LINE DIGITAL READOUT
featuring
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Over 1000 firms throughout the world in just a few years prove unprecedented acceptance of IEE digital readouts.

The IEE digital readout puts the digit right up front, visible from any angle. Vision is unimpaired by stacked characters and sharp, clear-white digits provide high-contrast, error-proof reading. Use of words, color, and multiple projections offer utmost versatility.

Binary-To-Decimal Decoders Available.
Representatives in Principal Cities

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Engineers and Manufacturers of Fully Automatic Systems and Digital Readouts
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ANCHOR ..... THE PLEDGE OF PERFORMANCE

Use HOLD-FAST

LOW PRESSURE, REUSABLE COUPLINGS for Styles "PR" and "PQ" Hose

These easily applied, hard gripping, low pressure couplings make better, faster, surer connections for hundreds of low pressure applications in the industrial and construction fields.

Put a few drops of oil in the hose, push it over the stem until it seats inside the protective cap and—presto—you have a blow-off proof connection that will withstand pressures to 250 psi!

Anchor Hold-Fast Low Pressure, Reusable Couplings can save you time and money! Catalog 303 gives complete specifications—write for it.

Andy Anchor says: "Your Anchor representative is a qualified specialist who can help with your hydraulic plumbing problems."

ANCHOR Coupling Co. Inc.
386 North Fourth St., Libertyville, Ill.
Branch Plants: Dallas, Texas; Plymouth, Mich.

▲ For more details circle NED-457 M on enclosed inquiry slip ▲

How to select the correct VARIABLE SPEED DRIVE

Get your FREE copy now!

Complete description and engineering data on the Cleveland Speed Variator.

This unique variable speed drive gives you infinitely variable, stepless speeds up to 9:1 (from ⅓ to 3 times input speed). Precise adjustment gives instant, smooth speed change by manual, automatic or remote control.

Simple construction, compact, quiet running. No belts or complicated linkage.

Thousands already in use. Write for Bulletin K-200.

CLEVELAND WORM & GEAR DIVISION
Eaton Manufacturing Company
3283 East 80th Street • Cleveland 4, Ohio

▲ For more details circle NED-458 M on enclosed inquiry slip ▲

LET US PROVE:

This office machine does more jobs than any other!

Thermo-Fax
COPYING MACHINES

Thermo-Fax COPYING PRODUCTS 3M
MINNESOTA MINING AND MANUFACTURING COMPANY
... WHERE RESEARCH IS THE KEY TO TOMORROW
THE TERM "THERMO-FAX" IS A REGISTERED TRADEMARK OF 3M COMPANY

At no obligation, I'm interested in seeing a "Thermo-Fax" Brand Copying Machine simplify the jobs I've circled.
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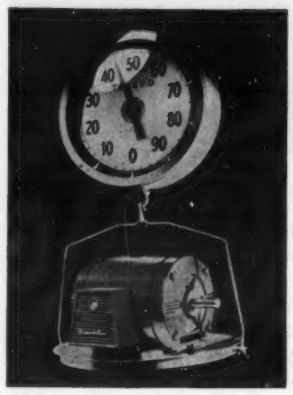
▲ For more details circle NED-459 M on enclosed inquiry slip ▲

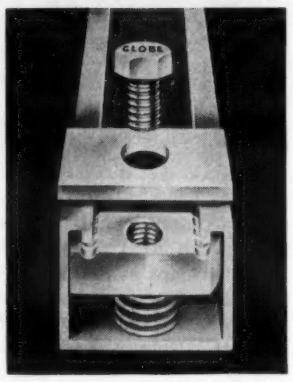
ALUMINUM MOTOR
weight savings range to 30 per cent



Lightweight aluminum alloys replace conventional cast iron construction in line of integral horsepower motors to effect weight reductions of up to 30 per cent. Motor frame, end bells, bearing caps, rotor, and conduit box are aluminum. Other features include prelubricated double-shielded bearings, quick-connect terminal board for voltage change, ample space in conduit box for protective devices, standard NEMA frames, Dacron insulation, and dripproof construction. • **Franklin Electric Co.**, Dept. 161, 346 E. Spring St., Bluffton, Ind.

▲ For more details circle NED-460 M on enclosed inquiry slip ▲

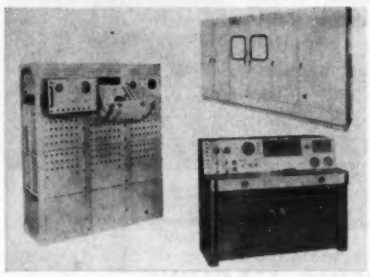
CHANNEL FRAMING
used with hacksaw and wrench



Galvanized channel framing and fittings can be used for any framing or suspension purpose. Set up with a hacksaw and wrench, it is reusable. Triple-grip lock nuts are utilized. Applications include storage racks, bins, electrical cable housings, tubing, and pipe clamps. Accessories available are fluorescent fixture hanger fittings, porcelain cable clamps, concrete inserts, pipe clamps, shelf brackets, beam clamps, and flat plate fittings, plus custom engineered devices. • **Globe Co.**, Products Div., 4000 S. Princeton Ave., Chicago 9, Ill.

▲ For more details circle NED-461 M on enclosed inquiry slip ▲

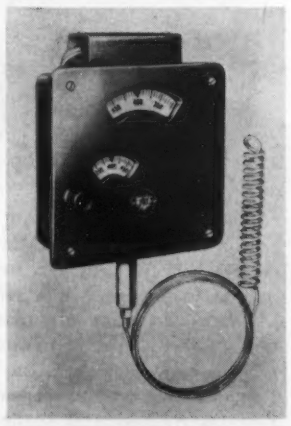
CUSTOM ELECTRICAL ENCLOSURES
sliding-tilting drawers featured



Sliding-tilting drawer enclosure currently featured in Formweld custom-built electrical and mechanical control cabinets and consoles allows instrumentation in each drawer to be serviced or replaced easily. Other advantages include machined panels, dust-sealed and pressurized features, and roll-type or swinging doors. The majority of these enclosures have panel-frame construction which eliminates separate angle iron frame and minimizes weight. All units are available in steel, aluminum, stainless, and other metals. • **Formweld Products Co.**, 1530 Coit Ave., East Cleveland 12, Ohio.

▲ For more details circle NED-462 M on enclosed inquiry slip ▲

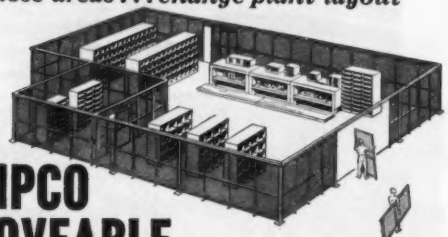
INDICATING TEMPERATURE CONTROL
15-amp, has −150 to 650° F range



Ovens, baths, environmental test chambers, molding machines, and plant processing are typical applications for the E32NA dual switch indicating temperature control. The two separate switches permit switch action above or below the index set point and will control up to four independent circuits. Thermal assembly in the −150 to 650° F range instrument is easily replaced in the field with no loss of calibration accuracy. Standard electrical rating is 15 amp, 115/230 v ac, with many types of switches and other ratings available. • **United Electric Controls Co.**, 79 School St., Watertown 72, Mass.

▲ For more details circle NED-463 M on enclosed inquiry slip ▲

New low-cost way to set up a department, enclose areas . . . change plant layout



WIPCO MOVEABLE WIRE PARTITIONS

NO SPECIAL TOOLS . . . NO SPECIAL CREWS NEEDED—*your own men* set them up, relocate them . . . *at less than the cost of wood framing and wire netting!* Everything you need—Standard panels plus all accessories (doors, windows, top panels, bars, braces, etc.)—available immediately from factory stock. Made of tough, machine woven steel wire, Wipco Partitions protect areas against theft and loss, permit ventilation and visibility . . . economical to maintain. *For firm price, send free hand sketch of areas to be enclosed.*

Write Today for Bulletin P-55

Wire and Iron Products, Inc.,
1727 Sixteenth St., Detroit 16, Mich.

▲ For more details circle NED-464 M on enclosed inquiry slip ▲

New Robotron Die Saver Proximity Switch provides . . .

AUTOMATIC PRESS CONTROL

FULL TIME SURVEILLANCE of Press Operations!

- Stops press automatically if malfunction occurs.
- Protects against hazards of multiple heading, die damage, scrap.
- Keeps presses operating efficiently and profitably *with limited supervision.*
- Increases output . . . reduces rejects.

Write for Bulletin 27-B Today!

Robotron® CORPORATION
21302 WEST EIGHT MILE ROAD • DETROIT 19, MICH.

▲ For more details circle NED-465 M on enclosed inquiry slip ▲

Here's BIG HELP IN TERMINAL WIRING!

The correct wire to correct terminal every time!

The New JONES FANNING STRIP

Connections are made through Fanning Strip on bench or anywhere apart from barrier strip, and quickly slipped into assembly.

Designed for use with Jones Barrier Terminal Strips Nos. 141 and 142, for 1 to 20 terminals.

9-141 Barrier Strip

Simplifies and facilitates soldering. Insures positive correct connections. Saves time. Ideal for harness or cable assembly. Strong construction: Brass terminals, cadmium plated. Heavy bakelite mounting.

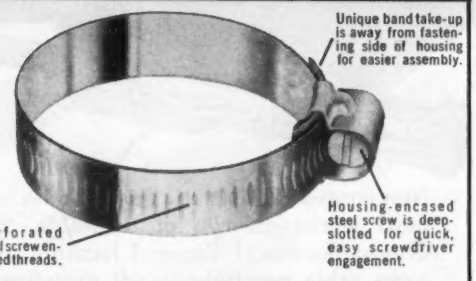
9-161 Fanning Strip. Pat. applied for.

Send for complete data on this new basic improvement!

Jones
HOWARD B. JONES DIVISION
CINCH MANUFACTURING COMPANY
CHICAGO 24, ILLINOIS
DIVISION OF UNITED-CARR FASTENER CORP.

▲ For more details circle NED-466 M on enclosed inquiry slip ▲

NEW, Versatile, Low Cost MARMAN Hose Clamps

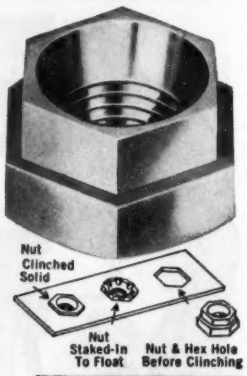


Marman Hose Clamps are ideal for fastening and holding rubber hose and a wide range of other industrial applications. They feature wide diameter adjustment, install easily, grip securely. Made of non-corrosive stainless steel for long, dependable service. Available in clamp diameters from 7/16" up to 7". Thumbscrew type is also available for applications requiring frequent hand assembly or disassembly. See your Marman Distributor, or write us for Bulletin 806.

Aeroquip
MARMAN DIVISION
11214 EXPOSITION BLVD., LOS ANGELES, CALIFORNIA
IN CANADA: AEROQUIP (CANADA) LTD., TORONTO 19, ONTARIO
Marman Products are Covered by U.S. and Foreign Patents and Other Patents Pending

For more details circle NED-467 M on enclosed inquiry slip

Use the exclusive GRIPCO® Clinch Nut for "fixed" fastening or "hard to reach" assemblies



For positive attaching of a threaded medium to thin metals. They are clinched solid for a rigid application, or staked in with a six point staking punch for a floating effect. Available with or without self-locking threads. Gripco Clinch Nuts can be clinched or staked with hydraulic or air equipment. Full details available—write for samples and NEW CATALOG today, or consult the yellow pages in your phone book under "GRIPCO" for the representative nearest you. 127

WITH GRIPCO FASTENERS YOU GET:

Service — 40 Sales representatives all over the country for prompt, fast service.

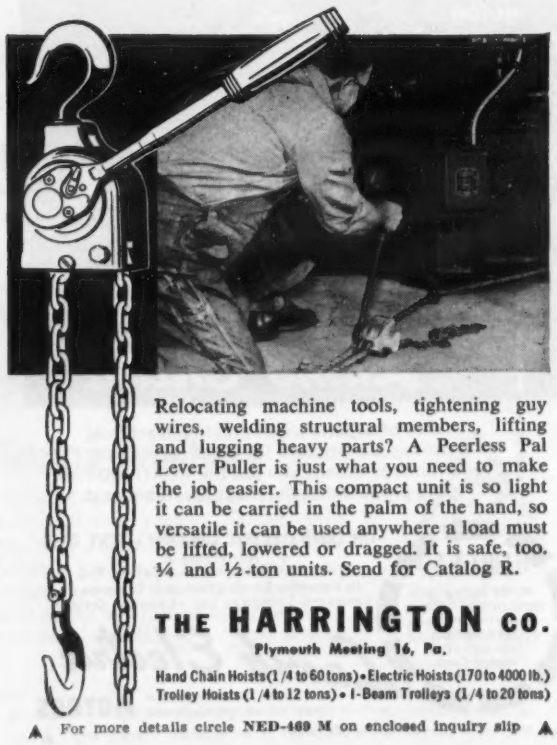
Reliability — Quality controlled by the oldest established lock nut manufacturer in the U.S.

Stock — Large inventories to ensure out of stock delivery on all catalogued items.

GRIP NUT COMPANY
Subsidiary of Heli-Coil Corporation, Danbury, Conn.
106 Maple Ave. • South Whitley, Ind.
Phone: South Whitley 723-5111

For more details circle NED-468 M on enclosed inquiry slip

New Peerless Pal Lever Puller Makes Many Jobs Much Easier

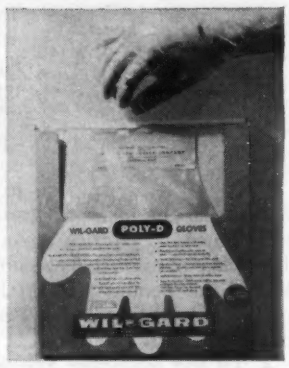


Relocating machine tools, tightening guy wires, welding structural members, lifting and lugging heavy parts? A Peerless Pal Lever Puller is just what you need to make the job easier. This compact unit is so light it can be carried in the palm of the hand, so versatile it can be used anywhere a load must be lifted, lowered or dragged. It is safe, too. ¼ and ½-ton units. Send for Catalog R.

THE HARRINGTON CO.
Plymouth Meeting 16, Pa.
Hand Chain Hoists (1/4 to 60 tons) • Electric Hoists (170 to 4000 lb.)
Trolley Hoists (1/4 to 12 tons) • I-Beam Trolleys (1/4 to 20 tons)

For more details circle NED-469 M on enclosed inquiry slip

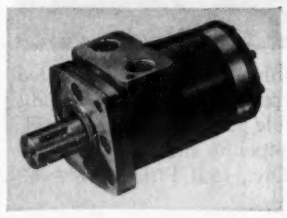
DISPOSABLE PLASTIC GLOVES prepowdered for easy use



Seventy-two Wil-Gard Poly-D disposable polyethylene gloves are packaged in a dispenser which has an adhesive surface for attaching to a wall, cabinet, or machine. Each glove is mounted lightly on paper for easy removal from the box. Paper is used to dispose of used gloves. The clear, five-fingered gloves are prepowdered with Bio-Sorb, making them easy to slip on or take off. They have strong, heat welded seams, smooth edges, are flexible, moistureproof, and chemically inert. Light and heavy weights are available in small, medium, and large sizes. • **Wilson Rubber Co.**, Industrial Div., 1200 Garfield Ave. S.W., Canton 6, Ohio.

For more details circle NED-470 M on enclosed inquiry slip

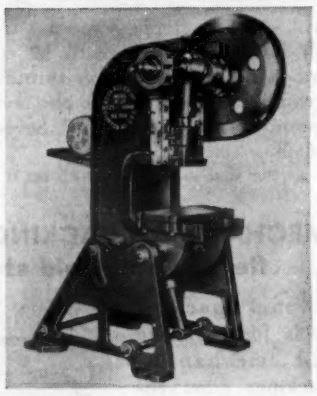
HYDRAULIC MOTOR high torque, low speed model



Up to 3300 lb-in. of torque are developed at 1500 psi by this high torque, low speed hydraulic motor. Intermittent pressures up to 2000 psi are possible. Smallest power element has a top speed of 800 rpm and develops 500 lb-in. at 1500 psi. Over-all housing length varies from 5.25 to 6.50 in., depending upon the thickness of the power element. Diameter is about 3.25 in. Variable speed at low rpm is possible with the instantly reversible units, offered with four types of mountings, three port sizes, and six power elements. • **Char-Lynn Co.**, 3415 E. 27th St., Minneapolis, Minn.

For more details circle NED-471 M on enclosed inquiry slip

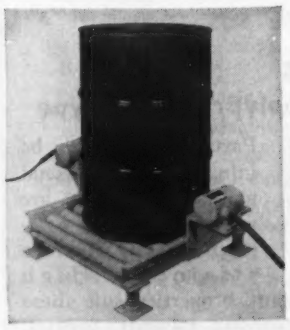
POWER PUNCH PRESS is 2-hp, 25-ton floor unit



Largest Allen power punch press is this 25-ton Model BT-25 which sets up easily for blanking, forming, shearing, riveting, drawing, cutting, punching, crimping, and other operations. Machine requires a 2-hp motor and has a 7⅜-in. shut height with 8-in. throat. The single-pin, knife type clutch can be changed from repeat to nonrepeat action. Mechanical tilting mechanism allows press to incline to 30 degrees. Standard stroke is 2½ in., with other strokes from ¼ to 4 in. available at extra charge. Opening in die bed is 5 x 8 in. Standard unit sells for $1097.50. • **Alva Allen Industries**, Punch Press Div., 1001-15 N. Third St., Clinton, Mo.

For more details circle NED-472 M on enclosed inquiry slip

VIBRATING PLATFORMS compact materials in containers



Installed as part of a roller conveyor or packaging system, these electric vibrating platforms serve to compact the contents of 55-gal drums or other packing containers. Vibrator units on each side of the platform provide adjustable settling action. When the conveyor height is greater than 1 ft, the quiet operating vibrator units may be mounted under the platform. Four coil springs isolate the unit from surrounding structures. Fatigue testing, simulating rough handling, and jogging paper are additional uses. Units operate on 110 to 550 v ac. • **Cleveland Vibrator Co.**, 2828 Clinton Ave., Cleveland 13, Ohio.

For more details circle NED-473 M on enclosed inquiry slip

PICK YOUR PAINT

...to fit the facts!

This file-size "Quick-Reference" Guide puts the basic facts you need to know for practical paint selections at your fingertips. Easy-to-use chart lists all Barreled Sunlight Exterior and Interior Paints with spot check details on finishes, colors, thinners and primers for best results on new or repaint work. Each paint is listed with quick reference data on applications, special resistance characteristics, drying time and coverage per square foot per gallon. Send for your free copy now. Write Barreled Sunlight Paint Company, 130-L Georgia Avenue, Providence 5, R. I.

Barreled Sunlight Paints
ENGINEERED
FOR A BETTER LOOKING, LONGER LASTING PAINT JOB AT LOWER COST

For more details circle NED-474 M on enclosed inquiry slip

TRIAL SAMPLE

Of World-Famous WHITMORE'S Lubricants NOW IN AEROSOL SPRAY-ON CANS!

HANDI-LUBE LIQUID GEAR COMPOSITION

Exclusive formula absolutely eliminates metal-to-metal contact on open gears, dipper sticks, cams, sliding surfaces. Keeps wear on the lubricant, not the metal! No breakdown even after prolonged use under water—available for every climatic condition. Now in extensive use in plants, pits, quarries, construction industries, etc. Packaged in 16-oz. aerosol spray-on containers in four grades—Light, Medium, Heavy and Extra Heavy. Send today for free trial sample. Specify application for which intended.

68 YEARS OF LEADERSHIP LUBRICATING THE FOLLOWING:

- Open Gears, Dipper Sticks, Cams
- Open and Enclosed Chain
- Hydraulic Units, Torque Converters
- Speed Reducers
- Enclosed Gear Cases
- Roller, Ball, and Sleeve Bearings
- Wire Rope and Cable

Est. 1893
THE WHITMORE MANUFACTURING CO.
LUBRICATING ENGINEERS
CLEVELAND 4, OHIO • VULCAN 3-7272

For more details circle NED-475 M on enclosed inquiry slip

NEW! Tennant develops first walk-behind Electric Sweeper!

- No noise, no fumes. Assures safe, ULTRA-CLEAN sweeping
- Propels itself at 1.9 mph. Sweeps 34" path (max.)
- Sweeps up to 2000 sq. ft. in 5 minutes or less
- Rotary 17" side brush sweeps flush with walls
- Full-floating 26" main brush sweeps dirt into 2 cu. ft. removable hopper
- High volume vacuum sucks fine dust into 2200 sq. in. filter area
- Easy-to-use finger-tip controls. Stops automatically when handle is released

First of its kind, the new TENNANT Model 40-E *Electric* Sweeper is in a class by itself for ultra-clean sweeping and quiet operation.

Just 33" wide, this new self-propelled, dual-battery machine is especially made for *swift, safe* and *silent* vacuumized sweeping of critical congested areas. No noise, no fumes, no odors . . . when you sweep *electrically!*

Sweeps over 38,000 sq. ft. on a single battery charge under normal conditions.

WRITE TODAY for colorful, illustrated bulletin!

OUR 90th YEAR TENNANT
Industry's Most Widely Used POWER SWEEPERS

G. H. TENNANT COMPANY • 715P N. Lilac Drive • MINNEAPOLIS 22, MINNESOTA

For more details circle NED-476 M on enclosed inquiry slip

NEW *Alnor* PYROTROLLER® Series N

An electronic temperature controlling instrument that automatically controls the heat source to maintain a constant temperature within a set range.

Designed for temperature control on heat treating furnaces, ovens, heat sealing equipment, plastic moulding machines, cooking vessels, or any application where a precise uniform temperature must be maintained.

Various temperature ranges, –100° F. up to 3000° F. can be supplied to meet your requirements. Our engineering service is available for special applications.

Write for bulletin

Alnor INSTRUMENTS

ALNOR INSTRUMENT CO.
Division of
Illinois Testing Laboratories, Inc.
Rm. 529, 420 N. LaSalle St., Chicago 10, Ill.

▲ For more details circle **NED-477 M** on enclosed inquiry slip ▲

HUOT DRILL DISPENSER!

Holds dozens of drills
Compact 7x7x14 size
Heavy duty drawers
Positive drawer stops

KEEPS THE RIGHT DRILL READY!
(No "jungle of drills" to hunt through)

WITH BUILT-IN INVENTORY

The built-in pricing or inventory system eliminates the need for troublesome record sheets. And you won't "run out" of drills either—you can see your complete stock at a glance!

Raised letters and numbers on drawer fronts are easy to read and will not rub off. Your dispenser comes in a choice of three models for numbered, lettered or fractional drills. May be stacked for compactness. Handsome gray hammerlin finish.

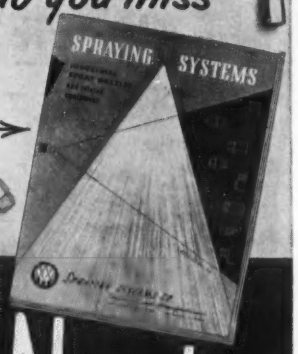
#1—Fractional Drills—$18.00
#2—Numbered Drills—$21.00
#3—Lettered Drills—$18.00

Write for Bulletin

HUOT **HUOT MANUFACTURING CO.**
571 No. Wheeler St. • St. Paul W4, Minnesota

▲ For more details circle **NED-478 M** on enclosed inquiry slip ▲

how much do you miss without this?



Spray Nozzles

COMPLETELY DESCRIBED AND ILLUSTRATED IN CATALOG 24—WRITE FOR YOUR COPY

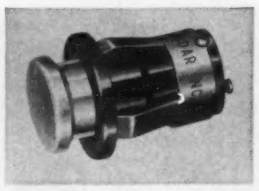
The most comprehensive spray nozzle catalog ever printed. Thousands of designs and sizes . . . unequalled choice of capacities, characteristics and materials. The result of over twenty-five years of specialized research, design and manufacturing.

SPRAYING SYSTEMS CO.
3211 RANDOLPH STREET • BELLWOOD, ILLINOIS

ADVANCED DESIGN • GREATER PRODUCT CHOICE • PROMPT SERVICE

▲ For more details circle **NED-479 M** on enclosed inquiry slip ▲

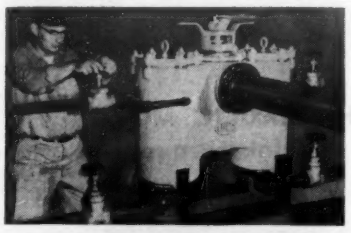
MOMENTARY KEYBOARD SWITCH
fast acting indicator light type



Type 2717 low current, fast-acting, momentary indicator light switch is usable in all types of keyboard devices, wherever momentary fingertip control switching is required. It has been tested to over 10 million cycles. Switch can be installed from the front of a panel and is retained in position by a three-point pressure clip. Lens, if engraved, is keyed to prevent turning and embodies the Pendar snap-in lens lock. Switch sells in quantity for $1 each. • **Pendar, Inc.**, 14744 Arminta St., Van Nuys, Calif.

▲ For more details circle **NED-480 M** on enclosed inquiry slip ▲

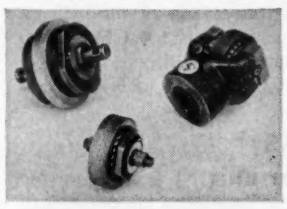
PIPELINE STRAINERS
single and double backwash types



Reverse flow of backwash fluid rinses these pipeline strainers free of foreign matter at the turn of a valve. Waste is discharged into the existing drainage system. The straining and backwashing process is concealed so that personnel are not exposed to hazardous fluids. Sinlex single and duplex double gate or plug type models are made for a range of pipeline sizes. • **Zurn Industries, Inc.**, Fluid Control Div., 1601 Pittsburgh Ave., Erie, Pa.

▲ For more details circle **NED-481 M** on enclosed inquiry slip ▲

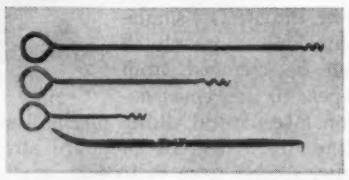
GRINDING WHEEL DRESSER
power driven diamond type



Alloy wheel into which are set many diamonds in rows across the peripheral surface comprises the Crushcutter traverse dressing tool for grinding wheels. It is power driven and electronically controlled with stepless speed variations, and will dress all kinds of wheels with its combination rotary and traversing action. A free-running unit, actuated by the grinding wheel itself, is also available. • **Sidley Diamond Tool Co.**, 26045 W. Seven Mile Rd., Detroit 40, Mich.

▲ For more details circle **NED-482 M** on enclosed inquiry slip ▲

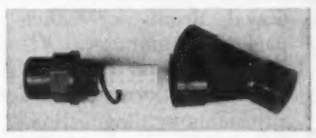
MECHANICAL PACKING TOOLS
flexible and rigid styles offered



All-steel packing tools for removing old mechanical packings from engine and pump stuffing boxes are offered in sizes for all stuffing boxes and in flexible and rigid (pictured) styles. Where tool strength is required, this rigid Flexrock 304 set is offered. These hooks can be bent without breakage to meet requirements. Flexrock 303 flexible hooks, also with cork screw ends, have a flexible steel cable shaft. They can be flexed to 90-degree angle without kinking or bending. • **Flexrock Co.**, 3603 Filbert St., Philadelphia 1, Pa.

▲ For more details circle **NED-483 M** on enclosed inquiry slip ▲

PIPE-LINE STRAINERS
½ through 2-in. polypropylene type

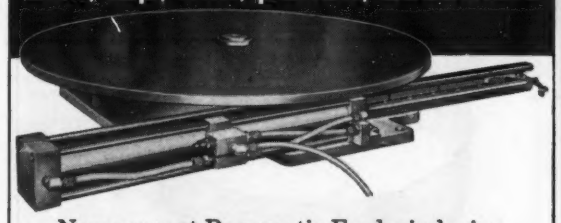


Particles that would be injurious to internal moving parts are trapped by these polypropylene pipe-line strainers. High strength and chemical resistant properties suit these strainers for applications involving solvents, greases, oils, and most common acids at temperatures up to 185° F. Sizes range from ½ through 2 in., with molded thread or socket weld ends. Strainer element is easily removed for cleaning or replacement. • **Vanton Pump & Equipment Corp.**, 201 Sweetland Ave., Hillside, N. J.

▲ For more details circle **NED-484 M** on enclosed inquiry slip ▲

TURRETABLE

Cuts cost of feeding parts to drill, tap, mill, punch, assemble



New concept Pneumatic Feed—indexing pawl works on *rim* of turntable, for utmost accuracy! Tapered locating pin locks table precisely in *all directions;* remains locked at all times except when actually moving to next station, even if air pressure should fail.

Fully described in Mead's complete catalog. Write today!

THE MEAD MAN CAN HELP YOU CUT COSTS Now!

MEAD SPECIALTIES COMPANY
4114 N. Knox Ave., Dept. 1290, Chicago 41, Ill.

PATHFINDER IN AIR POWER AUTOMATION

▲ For more details circle **NED-485 M** on enclosed inquiry slip ▲

A COMPLETELY MOBILE CONVERTIBLE BAND SAW with more capacity and more versatility

THE WELLS MODEL 58-B

Here's a compact, convertible band saw that provides the capacity you've been looking for . . . at a modest price. Equipped with optional wheel handle unit, the Model 58-B becomes completely mobile . . . easily rolls from job to job. Use the 58-B as a horizontal cut-off machine (capacity: 6" x 10") or swing the head to upright position, install work table and it's a utility vertical band saw. See your Wells Distributor or write for Bulletin 262.

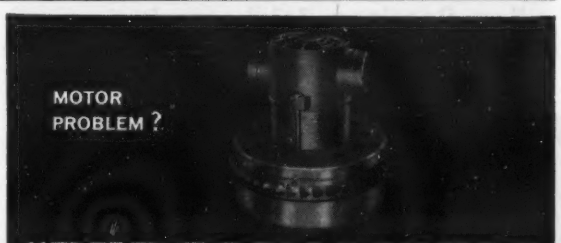
The Pioneers of Horizontal

Wells METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1313 Harding Street • Three Rivers, Mich.

▲ For more details circle **NED-486 M** on enclosed inquiry slip ▲

MOTOR PROBLEM ?



"PERSONALIZED" MOTORS
FOR YOUR NEW PRODUCT
Planned, Designed and Manufactured
by *Lamb Electric*

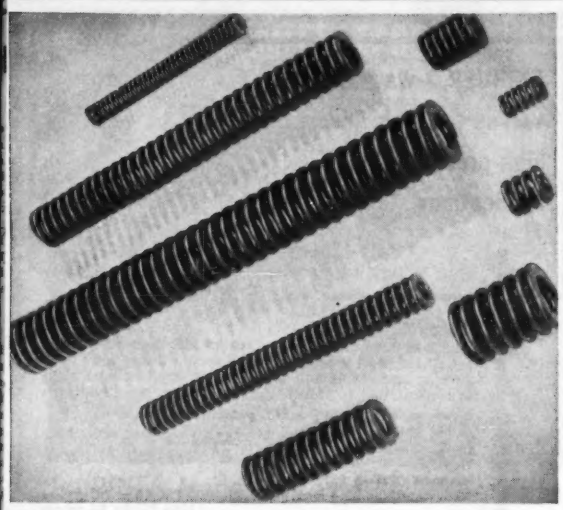
Years of experience in creating fractional horsepower motors for exacting product requirements means you get the RIGHT MOTOR, mass-produced at the most favorable cost.

FREE! Write today for descriptive folder, and information on how you can set up a "Motor Conference".

THE LAMB ELECTRIC COMPANY • KENT, OHIO
A Division of
American Machine and Metals, Inc.
In Canada: Lamb Electric — Division of Sangamo Company Ltd.—Leaside, Ontario

Lamb Electric SPECIAL APPLICATION FRACTIONAL HORSEPOWER MOTORS

▲ For more details circle **NED-487 M** on enclosed inquiry slip ▲



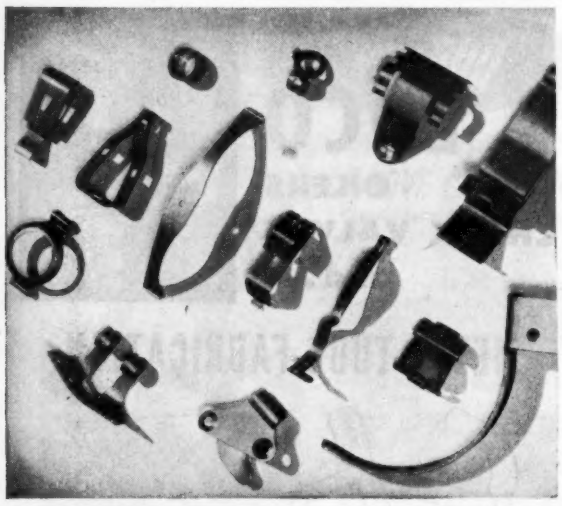
Die Springs

Chrome vanadium die springs in stock in a wide variety of hole and rod sizes, lengths and deflections. Medium, medium-heavy, heavy duty for increased life and reduced down time. Write for list of specifications and prices, and name of nearest distributor.

Associated Spring Corporation
General Offices
Bristol, Connecticut

5928

▲ For more details circle NED-488 M on enclosed inquiry slip ▲



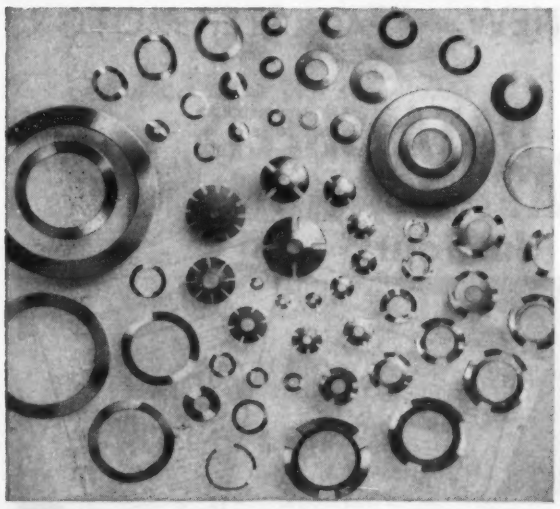
Flat Springs

Made from our cold-rolled specialty steels or the material of your choice. Ingenuity of tool design and versatile forming equipment combine operations and simplify production. Exceptionally varied experience in this class of work. Send samples or specifications for quotation.

Associated Spring Corporation
General Offices
Bristol, Connecticut

5929

▲ For more details circle NED-489 M on enclosed inquiry slip ▲



Spring Washers

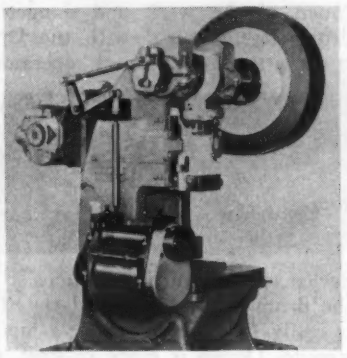
Thousands of tools available for production of your washers—slotted, finger, star, cupped, wavy, etc. Also belleville washers for use as springs in limited space. Save tool charges. Send for list of tool sizes ready to meet your requirements.

Associated Spring Corporation
General Offices
Bristol, Connecticut

5930

▲ For more details circle NED-490 M on enclosed inquiry slip ▲

PRECISION ROLL FEED
mounts directly on punch press



Two series of Benchmaster precision roll feeds handle stock widths up to 3, 5, 7, and 9 in. with feeds up to 3½ and 9 in., respectively. Powered by and synchronized with operation of press, it has a feed accuracy within 0.005 in. Spring-maintained roller pressure is adjustable, and an adjustable brake prevents overtravel. Other features include roller lifter, needle bearings, stock guides, and an adjustable mounting bracket. • **Benchmaster Mfg. Co.,** 1835 W. Rosencrans Ave., Gardena, Calif.

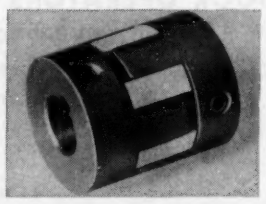
▲ For more details circle NED-491 M on enclosed inquiry slip ▲

LABORATORY DOLLY
top is adjustable to seven angles

Tubular steel Scope laboratory dolly is suited for easy reading and movement of such instruments as oscilloscopes, oscillographs, and other read-out or recording test gear. Its 18 x 26-in. top can be inclined and locked in any of seven positions. The top when flat is 34 in. high and is fitted with two convenience outlets with ground tap, plus an 8-ft cord. The lightweight dolly also has a 17 x 22-in. drawer and swivel casters with dual locks. • **Artisan Metal Works Co.,** 11400 Madison Ave., Cleveland 2, Ohio.

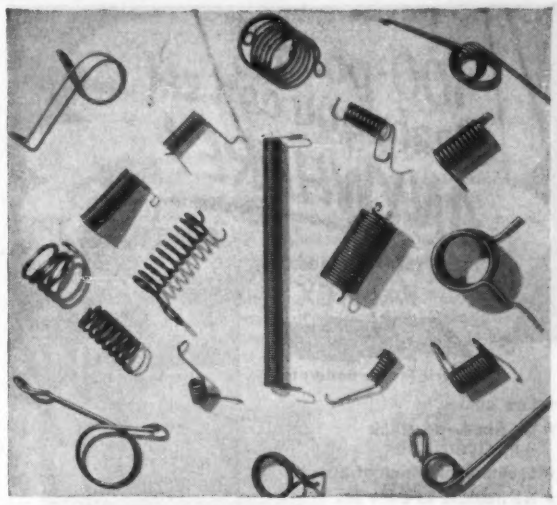
▲ For more details circle NED-492 M on enclosed inquiry slip ▲

FLEXIBLE COUPLINGS
for pumps handling corrosives



Chemical-resistant flexible coupling for pumps handling corrosive media consists of cast stainless steel serrated coupling halves which interlock on a shock-cushioning, self-lubricating Teflon spider. The molded, glass-filled plastic also acts as an electronic barrier, preventing passage of stray currents between driver and pump. Couplings compensate for mismatch, misalignment, and end movement of the shaft and can be removed for servicing pump gland without dismantling drive. Bore sizes range from 5/16 to ¾ in. • **Eco Engineering Co.,** 12 New York Ave., Newark 1, N. J.

▲ For more details circle NED-493 M on enclosed inquiry slip ▲



Torsion Springs

From a tiny hinge spring to a rugged auto starter spring, A.S.C. Divisions make countless varieties of torsion springs. Materials are round or flat wire wound spirally or on edge. Write for booklet "Spring Design and Selection—in brief."

Associated Spring Corporation
General Offices
Bristol, Connecticut

5931

▲ For more details circle NED-494 M on enclosed inquiry slip ▲

NEW . . . COMPACT . . .

Energy* Cartridge

A special type of spring

For high loads at minimum deflection

Custom designed and manufactured for specific application. Consists of belleville washers held together with rivets preassembled in a compact unit. Washers can be stacked in series, parallel, or parallel-series depending on load and space requirements. Saves assembly and installation time. For description, write for "Energy Cartridge" pamphlet.

*(Pat. No. 2,482,449)

Associated Spring Corporation
General Offices
Bristol, Connecticut

5932

▲ For more details circle NED-495 M on enclosed inquiry slip ▲

Engineering, manufacturing, and sales facilities located coast-to-coast for custom service on all your requirements

BRISTOL, Connecticut
Wallace Barnes Division
Dunbar Brothers Division
F. N. Manross and Sons Division

SYRACUSE 9, New York
Wallace Barnes Division
State Fair Boulevard

CORRY, Pennsylvania
Raymond Manufacturing Division

HAMILTON, Ontario, Canada
The Wallace Barnes Company Ltd.
274 Sherman Ave. North

MONTREAL, Quebec, Canada
The Wallace Barnes Company Ltd.
119 Hymus Boulevard
Pointe Claire

CLEVELAND 23, Ohio
Sales Office
22700 Shore Center Avenue

DAYTON 3, Ohio
Ohio Division
1825 East First Street

PLYMOUTH 2, Michigan
B-G-R Division
40300 Plymouth Road

ANN ARBOR, Michigan
B-G-R Division
401 East Stadium Boulevard

MATTOON, Illinois
Gibson Division

CHICAGO 46, Illinois
Sales Office
5322 West Devon Avenue

MILWAUKEE 2, Wisconsin
Milwaukee Division
341 East Erie Street

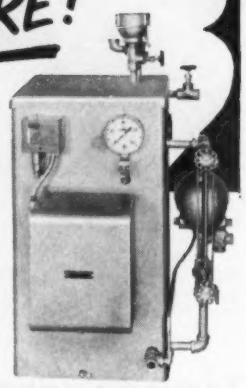
LOS ANGELES, California
Seaboard Pacific Division
15001 South Broadway
Gardena, California

Wallace Barnes Steel Division
Bristol, Connecticut
High Carbon Strip Steel

Associated Spring Corporation General Offices Bristol, Connecticut

100-pound steam you can set ANYWHERE!

The New S-100A
PANTEX
SPEEDYLECTRIC
Electric Steam Generator



★ Low cost
★ No flues—no stack —no storage tank
★ Steam at the flick of a switch
★ No heaters to burn out
★ 15" wide x 20" long x 28" high

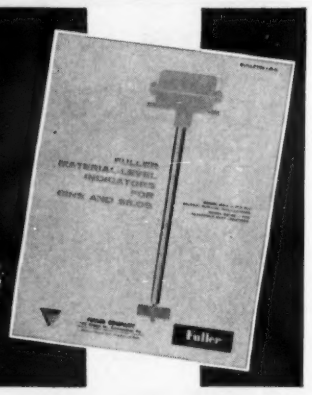
This compact, easily installed 1½ h.p. generator develops steam at pressures up to 100 psi at very low cost! Sets close to equipment. For 220, 440 and 550 volt service. A.S.M.E. code. Write now for descriptive bulletin!

PANTEX builds a complete line of electric steam generators and electric and fuel-fired steam jet cleaners. Technical bulletins on request.

PANTEX MANUFACTURING CORPORATION
BOX 660 Z, PAWTUCKET 12, R. I. 0-092-1

▲ For more details circle NED-496 M on enclosed inquiry slip ▲

COMPLETE STORY ON MATERIAL-LEVEL INDICATORS ...FREE!



Bulletin describes models for general purpose and hazardous dust locations in bins and silos

Write for this bulletin with illustrations, descriptions and specifications on Fuller Material-Level Indicators.
They show and maintain the level of materials in bins or silos, by starting or stopping the equipment-drive motors of feeders, valves, elevators and conveyors when a predetermined material level is reached.
They assure true indication, regardless of surges or settling of materials—also long service without attention or repairs.
Write for Bulletin I-5-C. 2616 I-3

FULLER COMPANY
154 Bridge Street
Catasauqua, Pa.
Fuller pioneers in harnessing AIR

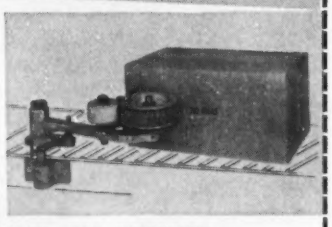
SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION
Offices in Principal Cities Throughout the World

▲ For more details circle NED-497 M on enclosed inquiry slip ▲

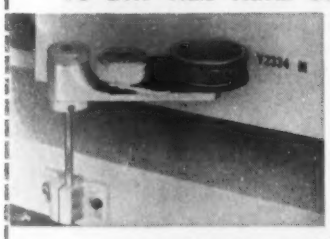
1st IN SPEED, SAVINGS, EFFICIENCY

PRYOR CONVEYOR LINE MARKERS TO FIT EVERY NEED!

THE ROCKET
Trouble free operation — vivid impressions—self inking. New simplified design for easier disassembly and inking. Baselock rubber type or dies for easy copy changes — up to 2" high printing. Durable aluminum construction.



10 DAY FREE TRIAL ON REQUEST



PRYOR jet

Specially built for lighter duty marking. Easy-to-read impressions up to ½ inch high.

Do you have a marking problem? Consult our experienced research department.

SOME SALES TERRITORIES OPEN

PRYOR MARKING PRODUCTS
434 SOUTH WABASH AVENUE • CHICAGO 5, ILLINOIS

▲ For more details circle NED-498 M on enclosed inquiry slip ▲

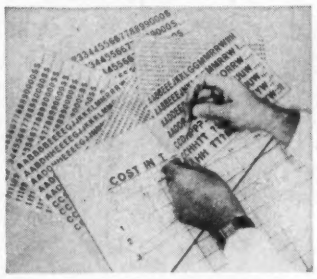
DRUM HANDLING ATTACHMENT
permits tilting of drum for storage

Much of the work and danger in handling heavy drums is minimized with the Drum Caddy fork lift truck attachment. Truck operator merely drops the

device over the drum, tightens a clamp and picks up the drum with the truck forks. The suspended drum is easily tilted for inserting a faucet, or for horizontal storage. Device is made of steel, weighs 11¾ lb, and has a weight limit of 1000 lb. Stainless steel units are available. Price is $12.50, including bracket for mounting on lift truck. • **Holsclaw Bros., Inc.**, 408 N. Willow Rd., Evansville, Ind.

▲ For more details circle NED-499 M on enclosed inquiry slip ▲

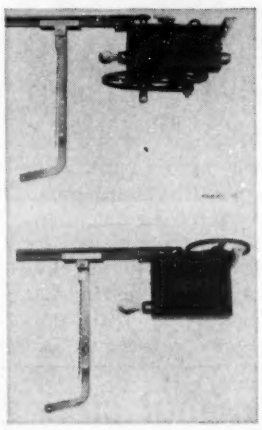
PRECUT LETTERS & NUMERALS
printed on adhesive acetate



Headings and titles are easily and quickly set up for use on office forms, charts, graphs, displays, and printed advertising matter using precut letters and numerals with a pressure-sensitive adhesive backing. They are printed in black on matte acetate and reproduce accurately by diazo or photographic methods. The 4½ x 11-in. sheets contain all the letters of the alphabet and punctuation marks, repeated according to frequency of use. Each is individually slit for peeling off the backing and placing in position with tweezers. Characters are aligned against a straight edge. • **Applied Graphics Corp.**, Glenwood Landing, L. I., N. Y.

▲ For more details circle NED-500 M on enclosed inquiry slip ▲

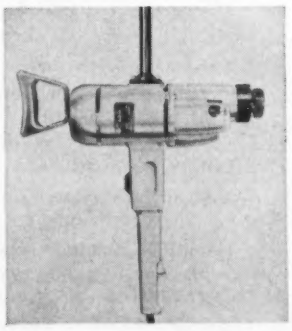
DOOR OPERATORS
for any overhead door



Only 1½ in. clearance above the top of door travel is required to install two electric door operators on any old or new overhead door. Model R for doors up to 18 ft wide and 7 ft high is hung from a joist. Momentary touch of a button actuates the door upward or closes and locks it automatically. It also operates lights. Similar Model RC for doors up to 18 x 8 ft has a Load-Selector which instantly reverses the door from downward travel if it touches an obstruction. Radio controls are also available. • **Better-Bilt Door Co.**, Egg Harbor City 2, N. J.

▲ For more details circle NED-501 M on enclosed inquiry slip ▲

HEAVY-DUTY DRILL
two-speed, 1¼-in. reversible type



Synchromesh transmission of this reversible heavy-duty drill allows instant speed change from 500 to 250 rpm while tool is operating. Two speeds facilitate drilling ½ to 1¼-in. holes. Reversing switch delivers full power in either forward or reverse operation. Tool can also be used to power speed reducers, hoists, and elevators and is equipped with heavy-duty motor, extra length switch and pipe handles for control, automatic release trigger switch, and heavy-duty ball bearings. It has a No. 3 Morse taper socket and can be furnished with reducing sleeves or chucks mounted on Morse taper arbors for smaller drill bits. List price with reversing switch is $285. • **Black & Decker Mfg. Co.**, 762 E. Pennsylvania Ave., Towson 4, Md.

▲ For more details circle NED-502 M on enclosed inquiry slip ▲

SKINNER 2-way solenoid valves for high flow, high pressure applications

These two-way solenoid valves handle high flow of air, oil, water, inert gases and other media under high pressure in industrial and commercial applications. They are available to meet the following specifications:

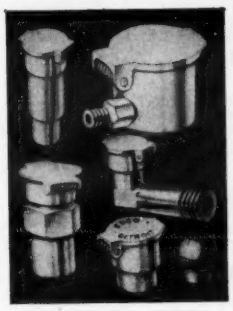
Type—Two-way normally closed, and normally open
Orifice Size—¼" diameter
Cv Factor—.758
Pipe Size—¼" NPTF (Dry Seal)
Minimum OPD—5 PSI
Maximum OPD—R2—normally closed—200 PSI AC or DC service
R2H—normally closed—1250 PSI for AC service; 500 PSI for DC service
R2H6—normally closed—1000 PSI for DC service
RP1—normally open—150 PSI AC or DC service
Temperature Range—Minus 40°F to plus 180°F
Voltage—Most AC and DC voltages and frequencies
Leakage—Bubbletight
Internal Parts—Stainless Steel
Body—Forged naval brass

For complete information, contact a Skinner Distributor listed in the Yellow Pages or write us at Dep't. 43D.

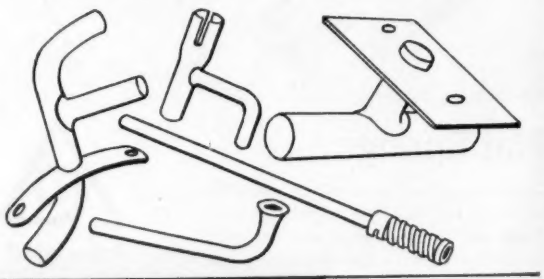
SKINNER ELECTRIC VALVES
THE CREST OF QUALITY
SKINNER ELECTRIC VALVE DIVISION
SKINNER PRECISION INDUSTRIES, INC. • NEW BRITAIN, CONNECTICUT, U.S.A.

▲ For more details circle NED-503 M on enclosed inquiry slip ▲

EDCO OILERS CHECK VALVES and...



METAL TUBE FABRICATION



EYNON-DAKIN CO.
9900 FREELAND AVE., DETROIT, MICH.
Phone TE 4-7700

Write for NEW OIL CATALOG No. 59 with Metal Tube Fabrication Data

▲ For more details circle NED-504 M on enclosed inquiry slip ▲

NEW digi tork STEP MOTOR BULLETINS
DATA SHEETS
APPLICATION NOTES
Just out!

DIGITORK is a totally new, *completely* digital torque-producing actuator that responds to discrete increments of motion — one step for each pulse.

It is the first infinitely variable speed device capable of maintaining exact, constant speeds in frequency ranges from 0 to 3 kc.

Learn how DIGITORK's unique stepping motor principle can solve your problem in precision control and power positioning. Write today.

First and only Industrial Digital motor of its kind!

PACE CONTROLS CORP. Needham Heights 94, Massachusetts

▲ For more details circle NED-505 M on enclosed inquiry slip ▲

On PINES Model 660 End Finishing Machine

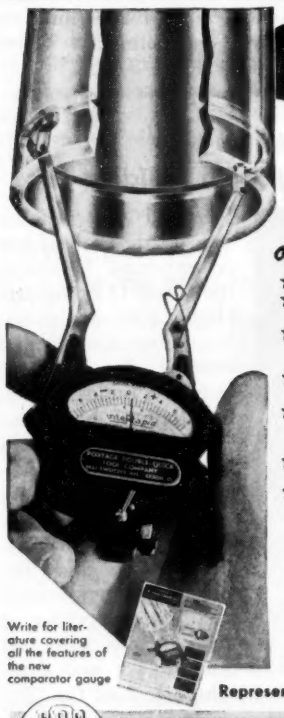
Designed especially for simultaneous inside-outside deburring, chamfering and facing operations on tube, rod and pipe ends, this *high production* machine features:

- EASIER OPERATION . . . with simplified controls.
- CLOSE TOLERANCE WORK AND FASTER FEEDS.
- 3-MINUTE CHANGEOVER . . . with interchangeable tooling and fast selection from 8 spindle speeds.
- HIGH PRODUCTION...to 1500 ends an hour in stock to 2" O.D.

BOTH MANUAL AND AIR OPERATED UNITS AVAILABLE
LARGER MACHINES ACCOMMODATE STOCK SIZES TO 5" O.D.

WRITE FOR NEW FREE CATALOG | PINES ENGINEERING CO., INC. Specialists in Tube Fabricating Machinery 641 WALNUT • AURORA, ILLINOIS

▲ For more details circle NED-506 M on enclosed inquiry slip ▲



NEW PDQ

inteRapid GROOVE CHECKING Comparator Gauge offers...

★ Precision, range and versatility
★ 3 and 2 point checking–3 point for production, 2 point for short runs
★ Quick setting adjustment knob sets scale reading from gage blocks, mikes or ring gauge.
★ Locking lever locks arms after setting is made
★ Retracting lever allows in and out movement of measuring arms while positioning instrument
★ Easily read large meter-type face is graduated in .0005"
★ Interchangeable tips offer versatility in application

The new P.D.Q. groove checking comparator gauge offers guaranteed Swiss accuracy and workmanship.

Sets come complete with both short and long groove tips, special "flat bottom" tips, button tips, centering arms, spare screws, special socket wrench and screw driver, all in one compact, sturdy case. Units measure internal grooves from 3/8" to 6".

Write for literature covering all the features of the new comparator gauge

Representatives in principal cities

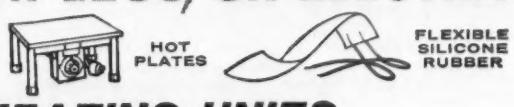
PORTAGE Double-Quick, Inc.
1043 SWEITZER AVENUE • AKRON 11, OHIO

▲ For more details circle NED-507 M on enclosed inquiry slip ▲

WATLOW GIVES

TWO WEEKS DELIVERY,

OR LESS, ON ELECTRIC



HEATING UNITS

Watlow production schedules have been stepped up to give you delivery of any type of heating unit in two weeks or less!

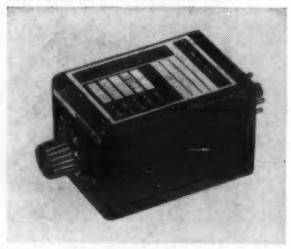
This means less downtime for you. Even on custom-designed units we can now quote on a fast delivery schedule.

WATLOW ELECTRIC MFG. CO.
1374 Ferguson Avenue
St. Louis 14, Mo.

6021

▲ For more details circle NED-508 M on enclosed inquiry slip ▲

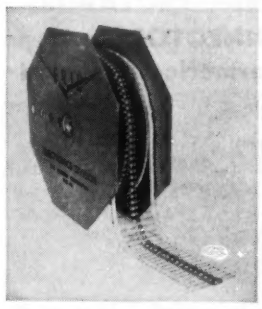
ELECTRONIC TIMER
subminiature unit is transistorized



Wide selection of timing ranges and physical mountings is available in the Model TR-302 transistorized electronic timer. The plug-in subminiature device has double-pole double-throw, 5-amp resistive contacts. Standard model operates on 115 v ac, with other voltages and solid state outputs optional. Repeat accuracy is within 0.2 per cent and is unaffected by voltage, temperature, and line transient. Single unit price is $73.60, and down to $44.16 in quantities. • **Syracuse Electronics Corp.**, Box 566, Syracuse 1, N. Y.

▲ For more details circle NED-509 M on enclosed inquiry slip ▲

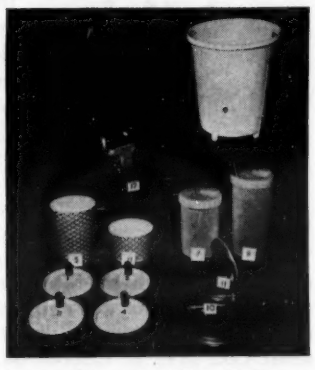
PACKAGED CAPACITORS
offered in ribbons or on reels



Uniform diameter, axial leads, 100 per cent testing, and uniform spacing on the feed tape make Style 309 and 310 Ceramicon tubular capacitors adaptable for automatic handling. The lacquer-enamel coated, dielectric units are available in the Reel Pak (shown) and a boxed Ribbon Pak, both suitable for automatic insertion or automatic cutting and forming of the leads. Both temperature compensating and general purpose ceramic dielectric bodies are made. Style 309 is available in 5 to 663 mmf and Style 310 in 14 to 1130 mmf. Working voltage is 600 v dc. Capacitors are 0.436 or 0.686 in. long, and have a 0.175-in. diameter, and 1.38-in. 20-gage tinned leads. • **Erie Resistor Corp.**, Erie Electronics Div., 645 W. 12th St., Erie 6, Pa.

▲ For more details circle NED-510 M on enclosed inquiry slip ▲

MATERIALS SPRAY GUN
for coating, laminating, or build-up



High and low viscosity materials ranging from 10 to 18,000 centipoises are applied at rates from ½ to 4 lb per minute with this R-2 All-Materials spray gun. It will handle ployester laminating resins and gel coats, epoxy surface coats and laminating resins, gypsum cements and molding plasters, and polysulfide and plastisol rubber mold materials. It has a No. 4-C nozzle lid for 16 and 32-oz cups, and requires 40 to 90-psi air at 8 to 12 cfm. Adjustable air control knob is set for the desired spray. Optional nozzle hose assembly permits spraying from a tank. Particularly suited for making molds, tooling, models, and patterns, it is also adaptable for many other industrial coating, laminating, and surfacing operations. • **United States Gypsum Co.**, Industrial Dept., 300 W. Adams St., Chicago 6, Ill.

▲ For more details circle NED-511 M on enclosed inquiry slip ▲

DOCK LEVELER
moves in and out, up and down

Two hydraulic power supplies operate the Wayne dock leveler, the larger raising and lowering it, and the smaller lengthening or shortening the platform. The 8 x 6-ft platform consists of a rear section hinged to an embedded channel in the recessed loading dock, and a forward extensible-retractable section. It retracts behind the dock face or extends 20 in. forward. Safety "skirts" are standard equipment. Leveler supports up to 10 tons at dock level or in leveling use. It is offered with a fixed one-piece lip or a split lip for use where the vehicle bed is 4 in. out of level. Operation is from a four-button control box. • **Wayne Pump Co.**, Griffin Street, Ft. Wayne 4, Ind.

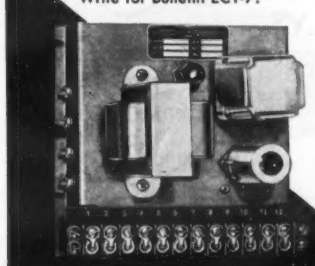
▲ For more details circle NED-512 M on enclosed inquiry slip ▲

WEBSTER ELECTRIC PILOT RELAYS

You can count on level detection better than 0.10 inch *plus* easy installation and exceptionally low maintenance with Webster PR series pilot relays. These dependable units can be used for single or dual liquid level controls (pump in or out), high or low level alarm, contact meter amplifiers, liquid leak and temperature detectors.

There are no moving parts in the liquid; no stuffing box or bellows. Control may be located remotely from the sensing point — special cable is not normally required. Two models: PR1 medium sensitivity and PR2 high sensitivity. Mounting can be open style for panels, semi-dust tight or oil and water tight enclosures.

Write for Bulletin EC1-7.



LEVEL DETECTION EXCEEDS 0.10 INCH!

COMPONENTS DIVISION
WEBSTER ELECTRIC
RACINE · WIS

Franklin adv. 8-172

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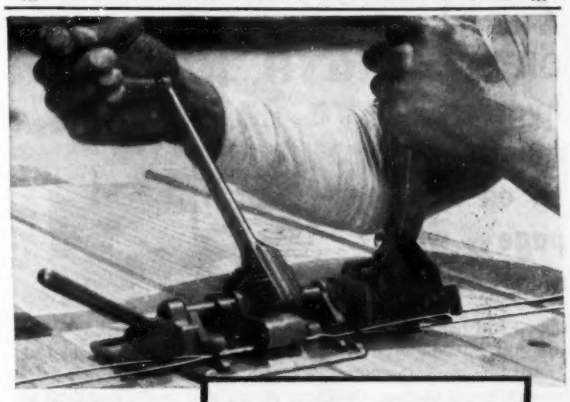


NOW! Save 50-80% on strapping

Twice as much for the money . . . Oval steel strapping gives you high tensile strength . . . a greater lineal feet per pound yield. Countless users have cut their strapping costs 50 to 80%. *Easier to use.* Just *one* tool to tension, twist and cut the strapping. You save time, manpower and equipment investment. *Full details.* Circle the reader service card, or write:

A. J. GERRARD & COMPANY | STRAPPING MATERIALS
410 East Touhy Avenue • Des Plaines, Illinois

▲ For more details circle NED-514 M on enclosed inquiry slip ▲

NEW Snap-on BUNG STARTER SOCKET

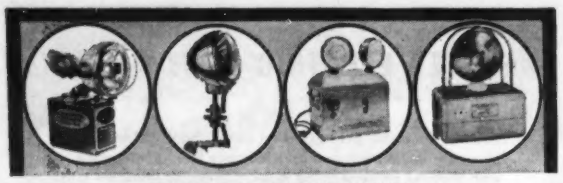
Another example of creative tool engineering from SNAP-ON

- Fits practically any bung on grease or oil drums, solvent containers, etc.
- Saves time, eliminates damage to bungs caused by hammering • Protects your knuckles.
- Fits any ½-in. drive wrench handle or impact wrench • Pays for itself over and over.

Order now from your SNAP-ON representative.

FOR ALL INDUSTRY
SNAP-ON TOOLS
8110-L 28TH AVENUE • KENOSHA, WISCONSIN

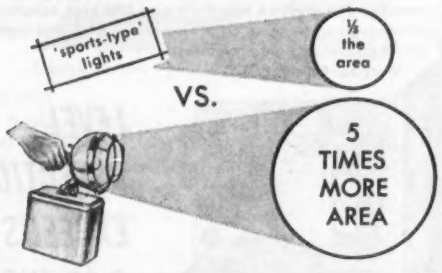
▲ For more details circle NED-515 M on enclosed inquiry slip ▲



THERE IS NO SUBSTITUTE

FOR **POWER . . .**

Insist on the lights with Power to spare . . . when you need it most!



"Portalites" cover five times the area of 'sports-type' lights with the same or greater intensity! Available with battery-pack specifically designed for emergency lighting . . . gives from 150% to 400% of the light at less cost! Also rechargeable battery types.

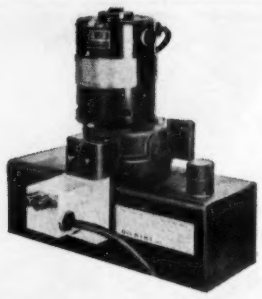
COMPLETE CATALOG ON REQUEST

CARPENTER MFG. COMPANY

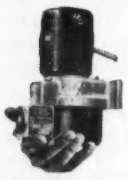
970 Bradley Street, Somerville 45, Mass. Telephone MOnument 6-4300

▲ For more details circle NED-516 M on enclosed inquiry slip ▲

A complete OIL-DYNE hydraulic unit could fit on this page — with room to spare!



If you still believe that hydraulic units must be big and bulky, you just haven't seen Oil-Dyne's miniature power package! And if you think the motor or pump must run constantly, you haven't heard that an Oil-Dyne motor and pump run ONLY while the cylinder piston is in motion. Perhaps, too, you didn't know that Oil-Dyne has eliminated all the complex external valving for directional control . . . and that when you shut off an Oil-Dyne reversible pump, the piston is automatically locked in position, and stays there indefinitely. Just to make sure you're aware of what's happened in hydraulics since Oil-Dyne pioneered miniaturization, you ought to write for our Catalog 21-E.



PIONEERING MINIATURIZED HYDRAULIC ACTUATION

OIL-DYNE INC.

2115X West Marquette Road • Chicago 36, Ill.

PUMPS • CYLINDERS • VALVES

PRESSURE SWITCHES • ACCESSORIES

▲ For more details circle NED-517 M on enclosed inquiry slip ▲

make hardness tests ANYWHERE WITH THE **NEWAGE TESTER**

- CLAMPS, JAWS & BASE PLATE ARE ELIMINATED
- NO CONVERSIONS OR CALCULATIONS
- TEST ANY SIZE, SHAPE OR TYPE METAL
- NO SKILL REQUIRED
- SCALE READINGS IN ROCKWELL & BRINELL
- ACCURACY GUARANTEED

Many thousands used by industry and government. Write, wire or call for additional details and prices.

NEWAGE INDUSTRIES, INC.

222 York Road *Jenkintown 13, Pennsylvania*

TUrner 4-8494

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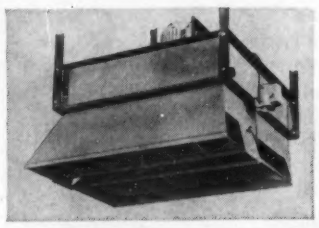
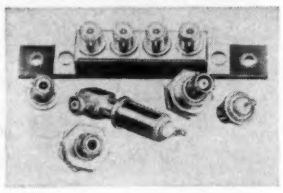
PLANT DOOR HEATERS
temper the inrush of cold air



When plant shipping doors are opened, the Vari-Jet dual-purpose-discharge door heater automatically provides a high velocity curtain of warm air to penetrate and temper the inrushing cold outside air. When doors are closed, a damper repositions for discharge of warm air at normal velocity under room thermostat control. Heaters are available in ten sizes for mounting heights to 22 ft with floor area coverage up to 60 x 132 ft when mounted for room heating, or 33 x 180 ft when mounted for perimeter heating. Either steam or hot water can be used as the heating medium. In summer, fan alone can be operated to promote circulation. • **L. J. Wing Mfg. Co.**, 2300 N. Stiles St., Linden, N. J.

▲ For more details circle NED-519 M on enclosed inquiry slip ▲

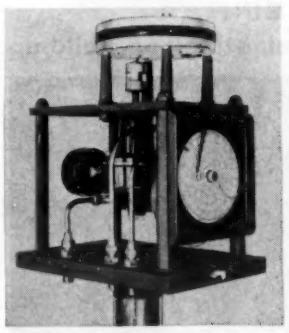
COAXIAL CABLE CONNECTOR
isolated ground hermetically sealed



Absolute protection from circulating currents and ground loops that cause oscillation and faulty readings of current and voltage is provided by isolated ground DM Series coaxial cable connector. Isolated ground is hermetically sealed. Mating dimensions are such that any system currently utilizing the DM Series can be readily modified to an isolated ground system. • **Dage Electric Co.**, 67 N. Second St., Beech Grove, Ind.

▲ For more details circle NED-520 M on enclosed inquiry slip ▲

GAS SAMPLER
continuous unit for hazardous areas



Over a period of seven days the Model M-R continuous gas sampler accumulates at a constant rate a sample of gas to a final pressure at or near 140 psi from the sample source with a minimum pressure of 160 psi. The long-range gas sample is gathered in a portable container for laboratory determination of its chemical and physical properties. Sampler includes a pressure recorder and can be used in hazardous areas as it needs no external power source. • **Arcco Instrument Co.**, 7144 E. Condor St., Los Angeles 22, Calif.

▲ For more details circle NED-521 M on enclosed inquiry slip ▲

ONLY VANTON SEALLESS PLASTIC PUMPS HAVE ALL THESE EXCLUSIVE FEATURES

- Non-Contaminating
- No Shaft Seals—No Stuffing Boxes
- Self-Priming—Non-Agitating
- Do not leak
- Operate dry or wet
- Handle corrosive chemicals, gases and slurries with equal ease
- Capacity range to 40 GPM
- Temperature range from —60°F. to +350°F.
- 54 combinations of materials such as Teflon, PVC, Kel F, Hypalon and Neoprene

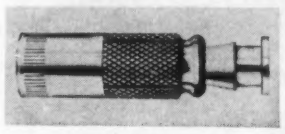
Write for Catalog #10A

Vanton PUMP & EQUIPMENT CORP.

DIVISION OF COOPER ALLOY CORP., HILLSIDE, N. J.

▲ For more details circle NED-522 M on enclosed inquiry slip ▲

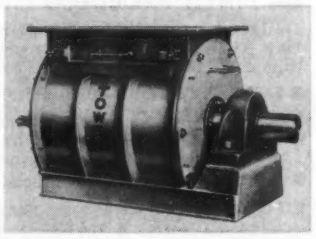
ALLOY STEEL ANCHORS
holding power up to 11,500 lb



Widely applicable in concrete, brick, or concrete block, Drilset Anchors range in holding power from 2880 to 11,500 lb. They are constructed with a pre-assembled expander plug and are set tight in a predrilled hole by a few strokes from a mallet or hammer. Setting time averages about 10 sec. Anchors are offered in 1/4, 3/8, 1/2, and 5/8-in. sizes. • **U. S. Expansion Bolt Co.**, 600 State St., York, Pa.

▲ For more details circle NED-523 M on enclosed inquiry slip ▲

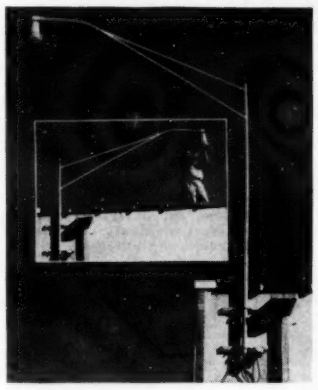
DRY PRODUCT FEEDERS
assure flow of powder, granules



Uniform flow of pulverized, powder, or granular dry materials in chemical, plastic, ceramic, food, and industrial mineral fields is assured with use of Tower pre-engineered dry feeders. Units have reinforced machined casings, corrosion resistant linings, and a channel base that takes the motor load off the feeder casing. Suitable for use as air locks on low pressure differential applications, feeders can be furnished with or without Teflon wiper blades and are available jacketed for heating or cooling. • **Tower Iron Works**, 60 Borden St., Providence 5, R. I.

▲ For more details circle NED-524 M on enclosed inquiry slip ▲

SWINGING LAMP ARM
allows servicing from building roof



Intended for installation on the wall of low or one-story buildings, the Circle D swing arm High Light can be easily swung around and lowered for servicing from the building roof. Installation is most suitable for plant protection, driveway illumination, and loading and parking areas. Twist Lock connection must be disengaged before lowering, safely cutting off power during servicing. Mercury vapor or incandescent lamps can be mounted and are cushioned by a floating spring mounted lamp socket and a resilient ring gasket. • **Natale Machine & Tool Co.**, 339 Highway 17, Carlstadt, N. J.

▲ For more details circle NED-525 M on enclosed inquiry slip ▲

FREE! NEW A.R.S.C.M. BOOKLET

NEW ROLLER CHAIN HORSEPOWER RATING and DRIVE-SELECTION DATA for ENGINEERS

As a public service, Morse Chain Company announces the availability of the new 12-page Roller Chain Rating booklet produced by the Association of Roller & Silent Chain Manufacturers.

Because of the years of research work performed by members of the A.R.S.C.M., the service life of roller chain can be predicted with much more accuracy. As a result, users of ASA roller chain can transmit more power than previously published, and engineers will benefit from this report of proven data compiled for quick reference in this valuable booklet.

Send for your copy on your own letterhead. No obligation. Write Dept. No. 19-120:

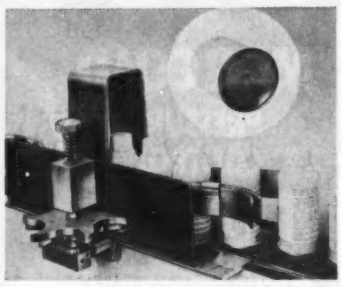
MORSE CHAIN COMPANY ITHACA, N. Y.

MORSE BW

A BORG-WARNER INDUSTRY

▲ For more details circle NED-526 M on enclosed inquiry slip ▲

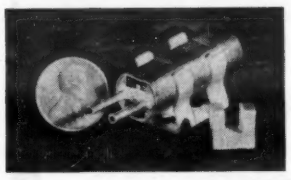
ROUND CONTAINER MARKER
is self-powered conveyor attachment



Code or price markings are imprinted automatically on the bottom of aerosol and other round containers by this low-cost, self-powered Sideline Markocoder. This unusually simple attachment is easy to install on any can conveyor, is driven by the product stream, and operates at normal line rates. • **Adolph Gottscho, Inc.**, 6 Terminal Rd., Hillside 5, N. J.

▲ For more details circle **NED-527 M** on enclosed inquiry slip ▲

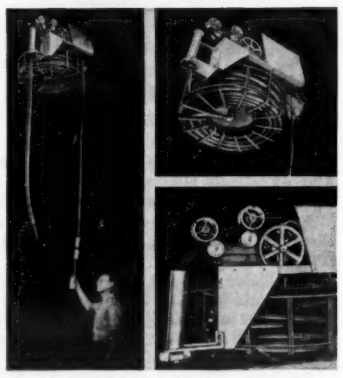
MINIATURE AIR SWITCH
2-oz unit is magnet actuated



Only a very low pneumatic actuating force is required by this Pneumation Model 103 S miniature air switch. The ½ x 1½-in. control has a bleed rate of 0.05 cfm at 10 psi when de-energized and 0 cfm when energized. Snap action in either position is by a small magnet on a moving member of a mechanism. Maximum pressure is 25 psi. Air switch can be used as a limit or proximity device to actuate remote position indicators or counters, or can be coupled directly to relay valves in cut-off and sequential circuitry. Price is about $25. • **Associated Control Equipment, Inc.**, Box 136, Coraopolis, Pa.

▲ For more details circle **NED-528 M** on enclosed inquiry slip ▲

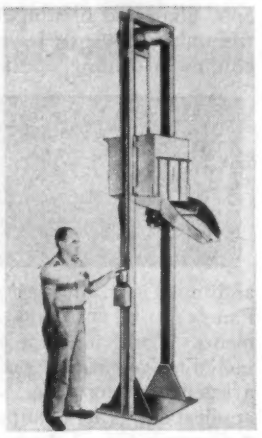
POWERED HOSE REEL
can be wall or ceiling mounted



Powered by a ⅓-hp electric motor, the Zierco heavy duty hose reel is operated by remote fingertip controls. Its vertical spindle design makes possible a gravity hose coiling system, eliminating kinks and tight coiling. Wall or ceiling mounting saves floor space. Six aluminum rollers pay out and take up the hose at a rate of 100 fpm. Reel capacity of 50 to 500 ft depends on hose size. Ceiling mounted unit is operated from a pendant control. • **Zierden Co.**, 3815 S. Kinnickinnic Ave., Milwaukee 7, Wis.

▲ For more details circle **NED-529 M** on enclosed inquiry slip ▲

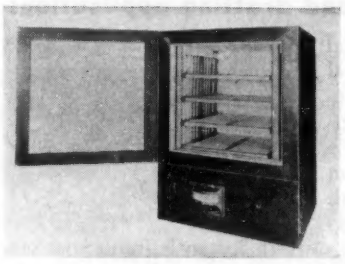
HOPPER ELEVATOR
made in various heights, capacities



An electromagnetic vibrator keeps parts flowing freely out of the hopper and over the chute of this hopper type electric elevator. It facilitates loading of parts into the bowls of vibrating parts feeders and can also be used for loading purposes in conjunction with other parts processing systems. Hopper sizes offered are 3, 5, 7, and 10 cu ft, with supporting structures of any height from 10 to 20 ft. • **Syntron Co.**, 405 Lexington Ave., Homer City, Pa.

▲ For more details circle **NED-531 M** on enclosed inquiry slip ▲

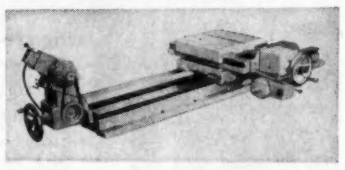
LABORATORY FURNACE
heats to 1600° F in 30 min



Heat-up time from ambient to 1600° F is 30 min or less in this laboratory furnace which features a recently developed high temperature insulation that reflects more than 90 per cent of the exposed radiant heat. Reduced size compared to conventional 5 to 8-in. firebrick allows increased hot chamber volume. Wattage requirements are up to 50 per cent less. Exterior heavy gage steel cabinet has a heat resistant enamel finish. Furnace has an indicating-controlling pyrometer. • **Shampaine Scientific Co.**, 615 First Ave., Roselle, N. J.

▲ For more details circle **NED-532 M** on enclosed inquiry slip ▲

FEED TABLES & SLIDES
sizes from 9 in. to 2 ft wide



One and two directions of feed are available in this line of powered erector type feed tables and slides for special machines. Standard models have electric, hydraulic, and pneumatic power as well as manual feeds. Sizes from 9 in. to 2 ft wide have longitudinal travels up to 15 ft. All feature precision movement, scraped dovetail ways, and extreme rigidity. Uses include positioning or feeding of workpieces and machining unit. • **Master Mfg. Co.**, 1330 E. Ave. A, Hutchinson, Kans.

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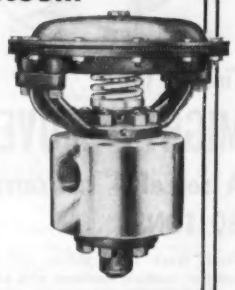
SINCLAIR-COLLINS

DIAPHRAGM OPERATED VALVES

. . . for control of high pressure hot or cold raw water, steam, oil, air, gas or vacuum



2, 3 and 4-way, automatic 2-pressure, 5-top, lever, check and selector types • air operated • automated or manual control • stainless steel trim • aluminum bronze billet bodies • pressures from near perfect vacuum to 6000 psi • ½ to 3 in. NPT • screw or flange mounted.

For more information, write for Bulletin SC-59. Address The Sinclair-Collins Valve Company, Akron 9, Ohio, Dept. NED-1260.

8120

The SINCLAIR-COLLINS VALVE Co.

DIVISION OF INTERNATIONAL BASIC ECONOMY CORPORATION (IBEC)
AKRON 11, OHIO

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ALEMITE HYDRASTAT AIRLESS SYSTEM

CUTS PAINT COSTS UP TO 40%

Puts paint only where you want it! There's no waste. You save up to 40% on materials. New Hydrastat Spray System atomizes paint by high pump pressure—without use of heat, without atomizing air. Result—overspray and bounceback are virtually eliminated.

Greater operating efficiency! The Hydrastat System permits faster application and better coverage...often eliminates need for a second coat. Use it indoors or outside—move it anywhere for fast, easy painting of permanent machine installations or large equipment. Cuts exhaust requirements and fire hazards...makes cleanup easier. Reduces air consumption, air equipment needs . . . saves working area. Operates at 24 to 1 ratio. Pumps from one, five, or ten-gallon cans or fifty-four-gallon drums.

Improves uniformity! Assures continuous, even flow of paint at constant pressure. Continuous agitation guarantees color uniformity and eliminates settling out of pigments.

WRITE FOR NEW ILLUSTRATED LITERATURE!

Symbol of SW Excellence

ALEMITE DIVISION STEWART-WARNER CORPORATION

Dept. HH-120, 1850 Diversey Parkway, Chicago 14, Illinois

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miller WELDERS

BIG TWIN 250 AC/DC

LITTLE TWIN 180 AC/DC

AND BOTH MILLERS ...*Through and Through*

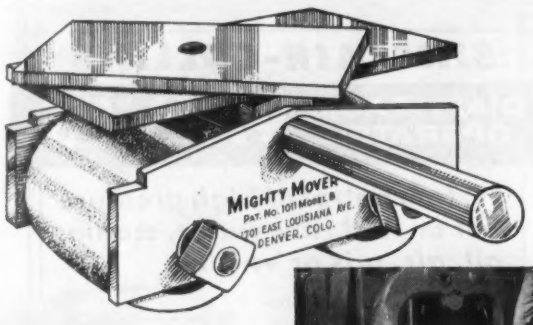
BIG TWIN combination ac-dc welders work from single phase service — deliver new convenience and economy. Two a-c amperage ranges of 20-125 and 60-290 plus two d-c ranges of 18-100 and 65-290 amps master nearly every welding requirement from light gauge metal to structural pieces. Movable shunt type transformer affords infinite current adjustments. Other features include: Horizontal design for easy stacking; weather-resistant construction and Class B insulation; Miller-built semi-metallic rectifier for best d-c welding; high open circuit voltages and new weld stabilizer. This is THE all-time, all-around welder!

LITTLE TWIN ac-dc combination welder has two a-c amperage ranges of 20-115 and 60-180 plus one d-c range of 40-150. Operating from single phase service, this Miller model incorporates many design and construction features usually found only in large industrial types. These include really rugged construction, forced air cooling, new Miller semi-metallic rectifier, movable shunt type current control, new weld stabilizer and open circuit voltage in abundance. Power factor correction is available on both models. Complete specifications on either model will be sent promptly upon request.

miller ELECTRIC MANUFACTURING COMPANY, INC., APPLETON, WISCONSIN

Distributed in Canada by Canadian Liquid Air Co., Ltd., Montreal

▲ For more details circle **NED-530 M** on enclosed inquiry slip ▲



This is the

MIGHTY MOVER

A set of 4 can carry 50 TONS!

These tough little dollies roll the heaviest, bulkiest machines with ease! Using a set of Mighty Mover heavy duty dollies, and pry-bars, it is merely routine for two men to move a 30,000 lb. screw machine 70 yards in less than half an hour! Mighty Mover dollies have two 4-inch roller bearing cast iron wheels, tough ½" side plates and top plate that has 360° directional control. Each dolly is 9" long, 5" wide and high, weighs 43 lbs. and can carry 25,000 lbs! They are the smartest answer yet to your plant's moving problems. Write today for prices, shipping information. PHONE: SPruce 7-3946

MIGHTY MOVER COMPANY

1701 EAST LOUISIANA AVENUE DENVER 10, COLORADO

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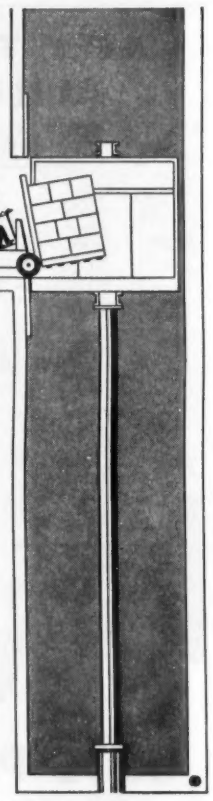
Most practical elevator for heavy-duty service



- Economical, dependable hydraulic operation
- Ruggedly built for shock loading . . . 1000 to 100,000 lb. capacities
- Elevator supported by hydraulic system . . . no overhead machinery, no cables
- Adjustments quickly made on one central control unit.
- Easily installed in new or old buildings

Rotary *Write for full information*

Oildraulic® Elevators

● ROTARY LIFT COMPANY
Division of Dover Corporation
1205 Kentucky, Memphis 2, Tenn.
Chatham, Ontario

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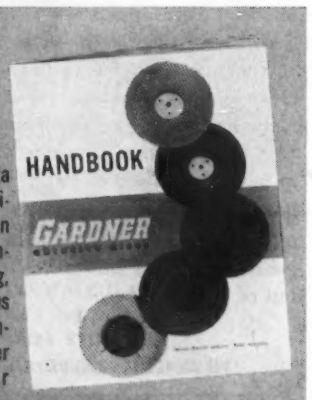
BRAND NEW ABRASIVE DISC HANDBOOK

FREE



38 pages of factual data compiled by Gardner engineers. Includes information on abrasive selection, handling, dressing and truing, safe speeds, coolants—plus other data to help you improve performance, lower costs. Write for your copy today.

GARDNER abrasive discs
460 Gardner St., Beloit, Wisconsin

ELECTROLUMINESCENT PANELS
sizes up to 12 x 12 in. available

Soft, glare-free lighting is produced by a line of electroluminescent panels, made of plastic for easy machining or drilling. Suited for instrument panel boards

and other uses, they are made in sizes up to 12 x 12 in. Panels can be custom designed to fit any space requirements. Long-life units are available in several colors, including green, blue, gold, and red, and can be given a legend by engraving, silk screening, or photographic application. Light output ranges from 0.1 to 72 ft-L. ● **Controls Co. of America**, Control Switch Div., 1420 Delmar Dr., Folcroft, Pa.

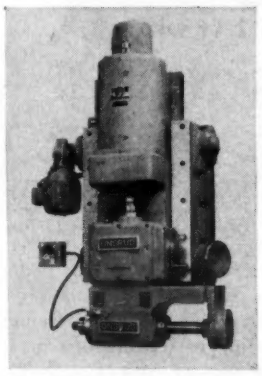
▲ For more details circle NED-538 M on enclosed inquiry slip ▲

ENGINEERING DESK
for design and drafting applications

Suited for individual as well as departmental installations, this design - drafting - engineering desk has a 43½ x 72-in. linoleum drawing surface with roll - holding brackets for large drawings. It converts instantly into a spacious office desk and has two easy-operating file drawer cabinets. Files can be used independently, if desired. The steel top and two files are easily assembled without tools. Bar type security lock protects confidential material. ● **Hamilton Mfg. Co.**, Drafting Products, Dept. WH317, Two Rivers, Wis.

▲ For more details circle NED-539 M on enclosed inquiry slip ▲

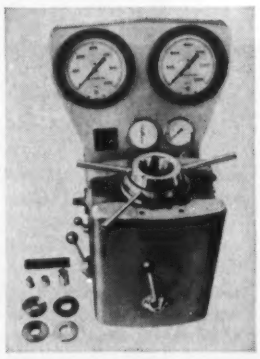
MILLING HEADS
for replacement or new machine use



Gear train drive of the MH-50 Series of milling heads provides a selection of milling speeds for all ferrous and nonferrous materials. Suited for replacement use or new installations, the heads are built with liquid cooled 50 and 25-50 hp motors. Speed ranges with the 50-hp motors are 25 to 1250 rpm and 36 to 1783 rpm. Dual speed motors have 12½ to 1250-rpm and 18 to 1783-rpm ranges. Single speed model with vertical spindle is 54 in. high by 20 in. square. A right angle attachment for milling at a 90-degree angle to the main spindle axis is available (see photo). Slides are available to meet any machine mounting requirement. Vertical head positioning is through power drive and final manual micrometer adjustment. ● **Onsrud Machine Works, Inc.**, Machine Tool Div., 7766 Lehigh Ave., Niles 48, Ill.

▲ For more details circle NED-540 M on enclosed inquiry slip ▲

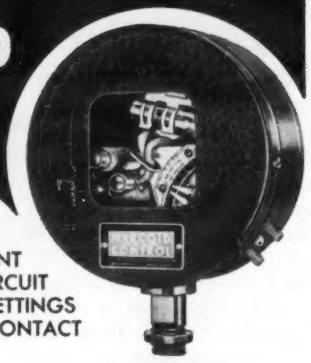
SHEET METAL TESTER
tests ductility or forming quality



Life of costly dies is prolonged by using this Ductomatic tester to reject defective sheet metal before it is formed. It simulates actual deep drawing press operations and predicts the ductility or forming quality of sheet metal accurately. Infinitely variable hydraulic clamping pressure is indicated, along with depth of cup and load applied. By substituting interchangeable plunger and dies, it can also be used for deep draw cupping, hole expansion, and electrical lacquer tests. An electronic shut-off (optional) automatically stops the test with the first sign of a crack. Tester is available in capacities from 12,000 to 70,000 lb. ● **Tinius Olsen Testing Machine Co.**, 557 Easton Rd., Willow Grove, Pa.

▲ For more details circle NED-541 M on enclosed inquiry slip ▲

5,000 psi.
MERCOID PRESSURE CONTROL



OUTSIDE ADJUSTMENT
VISIBLE ON/OFF CIRCUIT
VISIBLE PRESSURE SETTINGS
SEALED MERCURY CONTACT

OPERATING RANGE 500 to 5,000 psi.

AVAILABLE TYPES

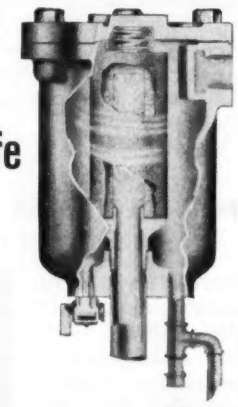
DXA-21
minimum differential 450 psi.
DXA-521
minimum differential 200 psi.
DXS-221
minimum differential 150 psi.

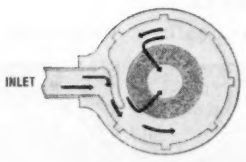
WRITE FOR BULLETIN O-21

THE MERCOID CORPORATION
4201 Belmont Ave., Chicago 41, Ill.

▲ For more details circle NED-542 M on enclosed inquiry slip ▲

ADAMS Poro-Stone Air Filters Keep Air Instruments Safe





Adams Poro-Stone Air Filters, removing entrained water, oil and dirt from your compressed air, assure less maintenance and longer life for your air instruments.

Passing through the millions of minute passages in the rigid Poro-Stone tube, air is literally scrubbed clean of damaging foreign matter.

To relieve the load on the filter element, larger particles and droplets are knocked out by centrifugal separation immediately upon entering the filter housing. Non-absorbent, chemically inert Poro-Stone stays open for maximum efficiency. Occasional rinsing in solvent is all that's needed.

See how Adams Poro-Stone Air Filters can give longer life to your air instruments. Bulletin 117 is complete with design diagrams, specifying tables and application data. Write for your copy today!

R. P. ADAMS CO., INC.
227 EAST PARK DRIVE BUFFALO 17, NEW YORK

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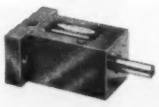
Modernair

CLAMP Type Air CYLINDERS

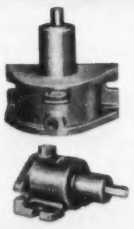
-a size and type to meet your needs



SERIES 800 — 1⅛" bore

Rectangular body, flat base for easy mounting, vertically or horizontally.

Model 800-1 (1" stroke) $8.50
Model 800-2 (2" stroke) $9.75



SERIES 900—2", 3" and 4" bore

Cast aluminum body with both horizontal and vertical mounting pads; slotted holes for easy positioning. Available in 1" and 2" stroke lengths.

Model	Bore	Stroke	Price
921	2"	1"	$16.00
922	2"	2"	19.00
931	3"	1"	23.50
932	3"	2"	26.50
941	4"	1"	47.50
942	4"	2"	51.50

Modernair offers the industry's most complete line of air cylinders and valves for shop and plant use. Write today for free catalog, price list.

Modernair CORPORATION
Industrial Products Division Dept. 76
400 Preda Street, San Leandro, California

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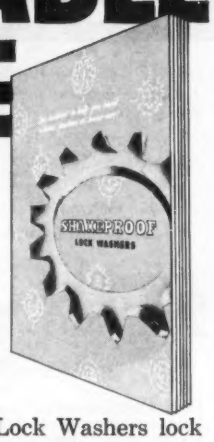
VALUABLE GUIDE



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the right
lock washer
every time

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DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois

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Kodak

KODAK ANNOUNCES

3 important new Kodagraph Films

Superb, high-contrast emulsions on new ESTAR BASE assure you of crisp, sharp, long-lasting, dimensionally stable reproductions of your drawings, maps, other documents. These three new ESTAR BASE films are also highly translucent, have an excellent matte surface on both sides . . . won't turn yellow or become brittle, and are moisture resistant. Available in cut sheets, and in rolls up to 52" wide.

1 **Kodagraph Autopositive Film, ESTAR BASE.** Ideal for general reproduction work—gives you same-size positive intermediates *directly* without negative step.

2 **Kodagraph Contact Film, ESTAR BASE.** Bound to be a darkroom favorite in making same-size reproductions of old or weak line originals from film or low-cost paper negatives.

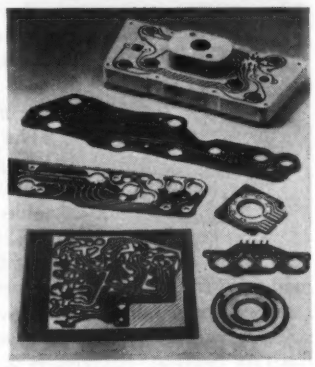
3 **Kodagraph Projection Film, ESTAR BASE.** Gives you sharp, clean results when enlarging microfilm negatives, or making reductions from film negatives.

Call local Kodagraph dealer for free folder, or write to Eastman Kodak Company, Graphic Reproduction Division, Rochester 4, N. Y.

NEW! Kodagraph
REPRODUCTION FILMS

▲ For more details circle NED-546 M on enclosed inquiry slip ▲

DIE STAMPED CIRCUITS
mass produced to close tolerances with various platings and finishes

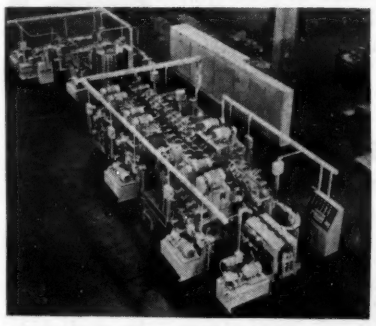


Economy is combined with reliability in stamped circuits by die cutting the conductor pattern from metal foil which is coated on one side with a thermo-responsive adhesive. It is simultaneously bonded to insulating base material under heat and pressure. Circuits are suited for instrument, computer, television, toy, and other products. In general, 25,000 or more circuit boards can be produced at less cost by die stamping than by etching, the manufacturer reports.

Minor changes in specifications can be made by altering the die. Tolerances as close as 0.003 in. can be held. Conductors up to 0.015 in. thick may be used in circuits designed to carry over 40 amp of current. Die stamped circuits can be supplied with immersion silver flash, electrosolder, or electrosilver platings and with epoxy resin, silicone resin, acrylic spray, water dip lacquer, and screened lacquer finishes. • **Dytronics, Inc.**, 115 Main St., Rochester, Mich.

▲ For more details circle NED-548 M on enclosed inquiry slip ▲

AUTOMATIC TRANSFER MACHINES
building block units handle work normally performed on lathes



Lathe operations such as turning and facing can now be handled as regular operations on automatic transfer machine lines. A standard line of building block units for lathe work is now available in Transfer-matic machines, and the units can be integrated with other operations such as milling, drilling, and assembling in line type or other forms of Cross special-purpose machine tools.

Illustrated sectionized Transfer-matic produces automotive wheel hubs by chucking the workpiece and rotating it as in a lathe. The three-section transfer machine turns raw castings into ready-to-assemble wheel hubs at a rate of over 150 per hour. It turns all diameters, bores bearing pockets, drills and broaches stud holes, and presses studs in place. • **Cross Co.**, Park Grove Station, Detroit 5, Mich.

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★★★★★ ★★★★★
IN EVERY FIELD, THERE IS ONE FOREMOST NAME . . . IN SONIC ENERGY, THAT NAME IS BENDIX

HOW TO TELL IF SONIC ENERGY CLEANING FITS INTO YOUR PICTURE

Open-minded to possible ways of improving your production operation—and your product? Wondering about the possibilities of Sonic Energy Cleaning in that direction? Here are four facts you should know.

1. Where applicable (it isn't always), Bendix Sonic Energy Cleaning is the *proved* way to reduce cleaning rejects, to lower costs, and to improve product performance.
2. Bendix® pioneered in developing this type of cleaning and is today the foremost Sonic Energy organization—with, by far, the most system and application experience.
3. The Bendix Sonic Energy Applications Laboratory is unmatched for production experience and specialized facilities to provide the most efficient answer for cleaning applications that can use Sonic Energy to advantage.
4. Bendix offers a complete line of Sonic Energy Cleaning systems. And, with Bendix flexibility, you can select the equipment which has valid economic justification.

SEND FOR THIS MOST AUTHORITATIVE REPORT ON SONIC ENERGY CLEANING

Explains in detail the principles and workings of this process. Illustrates, describes and analyzes typical results. Outlines five-step plan to help you determine feasibility of Sonic Energy Cleaning for you. To get your copy, write: PIONEER-CENTRAL DIVISION, THE BENDIX CORPORATION, 2725 HICKORY GROVE ROAD, DAVENPORT, IOWA.

Bendix CORPORATION — SONIC ENERGY CLEANING

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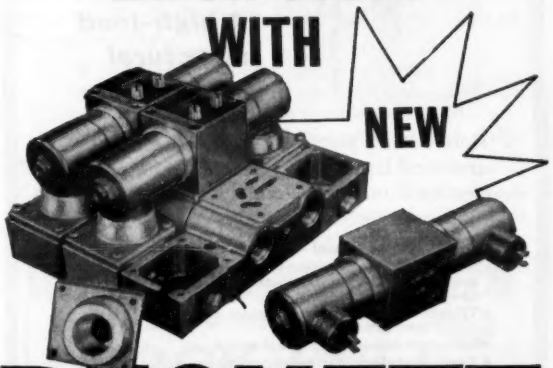
SAVE ON LABOR COSTS WITH NEW



BECKETT

Hi-Cyclic STACKING MANIFOLD AIR VALVES

- Change a valve in about 2 minutes or less without disturbing piping or wiring. Remove 4 bolts and lift off valve.
- Plug-in solenoid connections—no re-wiring needed to replace a valve.
- Large manifold capacity—add valves at any time, using same air supply.
- Manifold accepts 2 or 3-position, 1/4", 3/8" and modified 1/2" sizes. 1/4" valve mounts on 2 1/8" centers; 3/8" and modified 1/2" valves mount on 2 5/8" centers.
- Wide open bus duct-type wiring area makes for easy installation of electrics.
- Built-in speed controls—with instruction plate that identifies direction for speed regulation.
- These new Beckett Hi-Cyclic Air Valves provide fast reaction for accurate control. There are no working packings—seal is by precision metal-to-metal fit. Only the stainless steel spool and brass valve body in contact with media. Seven spool types are available to meet all requirements. New Hi-Cyclic Stacking Manifold Valves will save you money on direct labor costs for installation and replacement. Write today for full details.

DISTRIBUTORS IN MAJOR CITIES COAST-TO-COAST AND IN CANADA — NFPA MEMBER

BECKETT-HARCUM CO.
991 W. LOCUST STREET, WILMINGTON, OHIO

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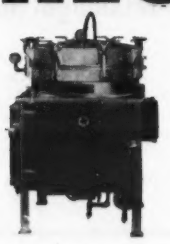
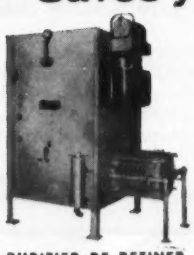
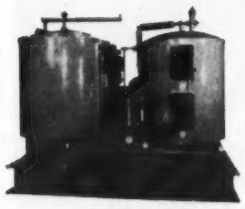
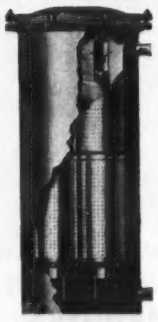
HILCO Oil Purification Equipment Saves your Oil, Machinery and Money


OIL RECLAIMER


PURIFIER-RE-REFINER


HIGH CAPACITY RECLAIMER


FILTER

One of these HILCO units will take care of your oil filtering or purification needs. Write to HILLIARD stating your problem and we will make a recommendation. A field representative will call if you prefer.

The complete line of equipment for reclaiming, filtering, purifying and re-refining oil . . . HILCO

Recover large quantities of oil at low cost, keep your equipment in top condition with clean oil, reduce maintenance costs and increase production. The Hilliard catalog will show you oil maintenance equipment for your specific application along with complete descriptive and engineering data. Write today!

There is a HILCO to take care of YOUR OIL PURIFICATION PROBLEM

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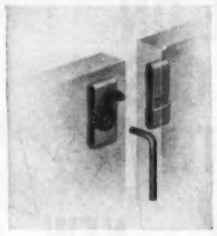

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DUAL-LOCK... A high-load structural fastener

Here's a new high-load, positive-locking structural fastener that can cut your assembly costs on demountable buildings, shipping containers, aircraft cowlings, etc.

Check these Dual-Lock features:

- Double-acting take-up insures heavy closing pressure; provides pressure-tight seal when gaskets are used.
- Trigger action insures full open and full closed positions.
- Vibration-proof and impact-proof.
- Easily installed; can be recessed in panels or surface-mounted.
- Withstands 7000-lb. tension.

Write today for samples and 40-page catalog.

SIMMONS FASTENERS
Quick-Lock · Spring-Lock · Roto-Lock · Link-Lock · Dual-Lock · Hinge-Lock

SIMMONS FASTENER CORPORATION
1793 North Broadway, Albany 1, N. Y.

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PICK UP DANGEROUS METAL

from

• Parking lots • Factory floors and aisles • Storage yards • Driveways • Docks • Inter-plant roadways • Railway sidings • Airport runways and aprons

with **DINGS Magnetic Sweepers**

Here's the easy, economical way to prevent accidents to men and equipment. Pick up foot-entangling or tire-puncturing metal with the Dings non-electric Magnetic Sweeper model that best fits your needs.

Dings Road Sweepers, either trailer-mounted or suspended from any mobile equipment, are lightweight, waterproof, guaranteed permanent. Dings Floor Sweepers, also guaranteed permanent, are newly designed for quick, easy cleaning.

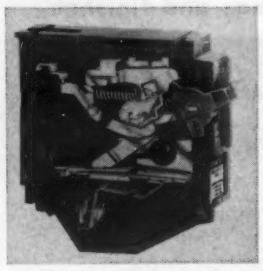
Write for Bulletins 1210-A-4 and B-1302-A today.

DINGS MAGNETIC SEPARATOR CO.
4758 W. Electric Ave.
Milwaukee 46, Wisc.

Dings

▲ For more details circle NED-554 M on enclosed inquiry slip ▲

DUPLEX CIRCUIT BREAKER
rated at 15-15, 15-20, and 20-20 amp



Duplex breaker mechanism of this circuit breaker load center is assembled back-to-back in a standard size case and mechanically attached to a rigid steel back plate. The double unit has limited temperature rise after extensive switching. It is available in these ratings: 15-15, 15-20, and 20-20 amp at 120/240 v ac. Single circuit breakers of this type are made in 15, 20, and 30 amp, 120/240 v ac ratings. Load center panel boxes are available in 2 to 42-circuit sizes in various types. • **Bryant Electric Co.**, Box D, Barnum Station, Bridgeport 2, Conn.

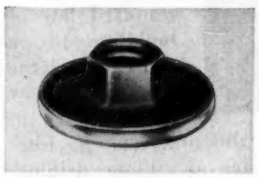
▲ For more details circle NED-555 M on enclosed inquiry slip ▲

MODULAR CABINET RACKS
in 48⅛ to 83⅛-in. heights

Features found in custom-built housings are embodied in Types PL and FL modular cabinet racks which have open side walls and detachable side panels. Modern ball-cornered design has a frame welded of 7/64-in. thick steel at top and bottom, enabling racks to hold heavy loads. Type PL provides rear door only, whereas Type FL provides both front and rear doors. Racks are available in heights of 48⅛, 67⅜, and 76⅛, and 83⅛ in., depths of 18 and 24 in., and widths of 19, 24, and 30 in. They accommodate a variety of accessories and range in price from $92 to $274. • **Par-Metal Products Corp.**, 32-62 49th St., Long Island City 3, N. Y.

▲ For more details circle NED-556 M on enclosed inquiry slip ▲

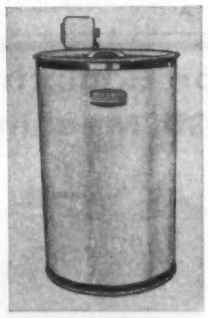
CAPTIVE WASHER NUT
contributes to savings in space



Significant savings in space and weight result from the use of this captive washer nut, a lightweight, self-locking fastener. As applied to a Lockheed terminal block, it makes possible close spacing of terminals as a minimum of wrench clearance is required. The integral free-spinning washer cannot drop off into places where damage might result. • **Kaynar Mfg. Co.**, Kaylock Div., Box 2001, Terminal Annex, Los Angeles 54, Calif.

▲ For more details circle NED-557 M on enclosed inquiry slip ▲

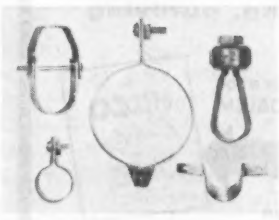
WATER SOFTENER
handles water with 5 ppm of iron



Compact, single-unit design of the Tuck-A-Way water softener has the softener tank in the brine tank to facilitate installation and eliminate condensation. Unit carries high-capacity, triple-purpose resin, allowing the use of a relatively small softener tank without reducing efficiency. Both tanks are of plastic coated galvanized steel. Water containing up to 5 ppm of iron can be handled by the unit with a weekly capacity of 100,000 grains. Brine tank has a capacity of 200 lb of salt. • **Modern Water Equipment Co.**, Freeport, Ill.

▲ For more details circle NED-558 M on enclosed inquiry slip ▲

TUBE HANGERS
copper plated to resist corrosion



Series of steel tube hangers for copper tube and pipe with ⅜ to 6-in. OD includes adjustable ring, hinge, and clevis types. Hangers are heavily plated with copper for permanent corrosion resistance. Series has been added to the Grabler Square GEE line of hangers, supports, and accessories. • **Grabler Mfg. Co.**, 6565 Broadway, Cleveland 5, Ohio.

▲ For more details circle NED-559 M on enclosed inquiry slip ▲

NEW DIRECTIONAL VALVE DESIGNS improve reliability, boost capacity

New Q-E-L (Quiet Extended Life) solenoids—a Vickers exclusive—assure quiet and cool operation plus shock-free performance.

- Capacity increased 50 to 500% with no increase in price.
- Solenoid life increased 4 to 5 times over ordinary air-cooled types.
- All models suitable for pressures to 3000 psi.
- Sizes available for flows to 440 gpm.

VICKERS.
VICKERS INCORPORATED
DIVISION OF SPERRY RAND CORPORATION
Machinery Hydraulics Division
ADMINISTRATIVE and ENGINEERING CENTER
Department 1400 • Detroit 32, Michigan

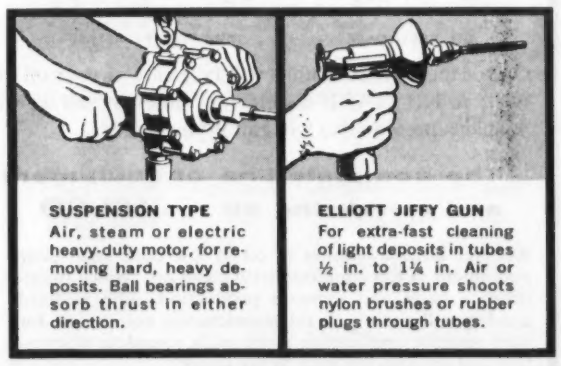
9273

▲ For more details circle NED-560 M on enclosed inquiry slip ▲

newest
ELLIOTT
tube cleaner
lightweight! air-driven!

for condenser and heat exchanger tubes

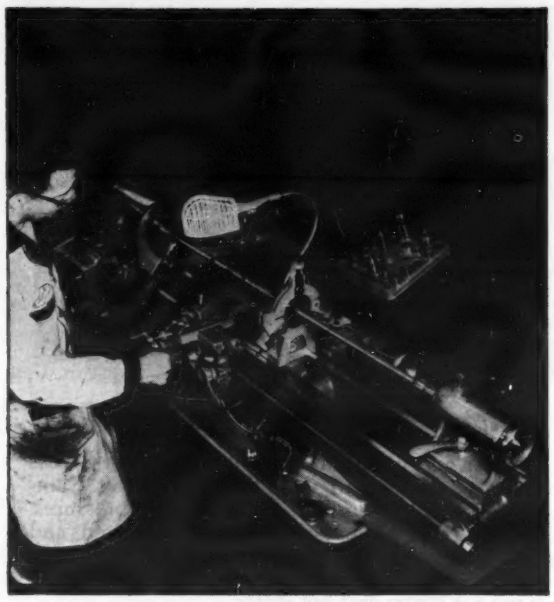
Lightweight. Powerful. Air-driven. Trigger-action control with speed governor to prevent shaft-whip. High-speed motor reduced through planetary gears to 1500 rpm. Integral water-feeding attachment with finger-action valve which controls flow of cooling water into hollow shaft and drill or brush. Drills and brushes for varied needs. Built-in oil reservoir. Send for tube cleaner bulletin Y-48.



ELLIOTT Company
Lagonda Plant—Springfield, Ohio

Y9-1A

▲ For more details circle NED-561 M on enclosed inquiry slip ▲



NEW 'Long Bed' 10" Metal Lathe

Now Delta introduces the "big brother" to the famous 10" Metal Lathe—with a big 36" capacity between centers. It's the big value in its class; offers this exclusive combination of features:

- Variable Speed Drive—choice of speeds from 50 to 1500 rpm.
- Quick Change Gear Box—selection of 54 feed rates or thread pitches.
- ¾" Collet Capacity—get the largest available in any comparable lathe.

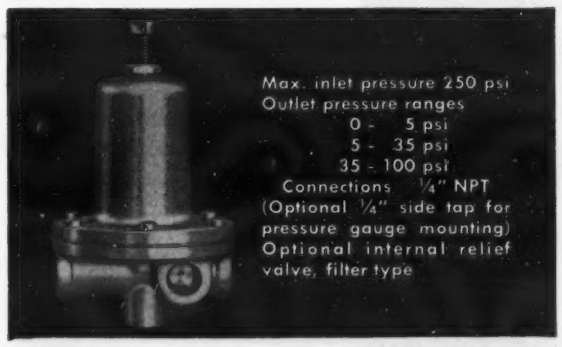
Here is a low cost, precision lathe capable of handling production, tool room and maintenance jobs. Learn how you can *do* more with the many extra performance features you get from Delta—visit your Delta Industrial Distributor (listed under "TOOLS" or "MACHINERY" in the Yellow Pages).

FREE DELTA METAL LATHE CATALOG

Pictures and describes the complete line of Delta Metal Lathes and accessories. Write: Rockwell Manufacturing Co., Delta Power Tool Division, 626M N. Lexington Ave., Pittsburgh 8, Pa. In Canada: Rockwell Manufacturing Co. of Canada, Ltd., Guelph, Ont.

DELTA INDUSTRIAL TOOLS
another fine product by
ROCKWELL

For more details circle NED-562 M on enclosed inquiry slip



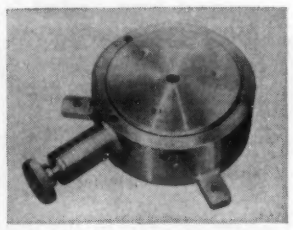
NEW Instrument Regulator

The Rockwell "080" instrument regulator is the latest, most versatile for all "in plant" locations where a constant air or gas pressure must be supplied to *recording* and *control* devices. It is also highly useful for controlling paint spray units, air chucks, gas drives, air cylinders and LPG systems. Write for bulletin 1111, Rockwell Manufacturing Company, Dept. 45-M Pittsburgh 8, Pa.
In Canada, Rockwell Manufacturing Company of Canada, Ltd., Box 420, Guelph, Ontario.

"080" INSTRUMENT REGULATOR
another fine product by
ROCKWELL

For more details circle NED-563 M on enclosed inquiry slip

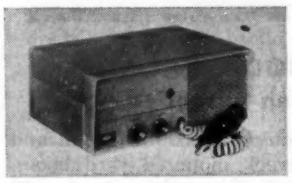
HYDRAULIC LOAD CELL
has 30,000-lb load capacity



Load measurement testing machines, loading frames, and special weighing and test work are typical uses for this 7½-in. diameter, 3-in. high hydraulic load cell with 30,000-lb load capacity. Cell mounts in permanent or removable installations and is connected by means of a flexible line to an indicator gage calibrated to read the applied load to within 1 per cent. An 8½-in. diameter gage and calibration are included with the cell set. Lower capacity cells are available. • **Soiltest, Inc.**, 4711 W. North Ave., Chicago 39, Ill.

For more details circle NED-564 M on enclosed inquiry slip

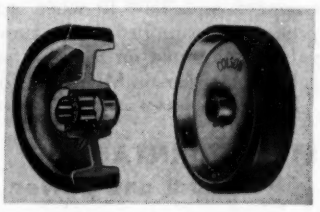
TWO-WAY RADIO
base and mobile units are same size



Economical communications between a central station control point and mobile units is provided by the G-150 Business Communicator two-way radio. It operates on frequencies within the 150-174 megacycle range assigned by the FCC. Power input of 18 w is over twice that of Citizens Band units. The same basic self-contained unit is used for base station and mobile installations. The 8½ x 12½ x 5-in. cabinet includes transmitter, receiver, power supply, and loudspeaker. Models are available for 6, 12, or 24-v dc mobile service or 117 v ac fixed station use. Receiver is a double-conversation superheterodyne type. Individual operator licenses are not required. • **Young Spring & Wire Corp.**, Gonset Div., 801 S. Main St., Burbank, Calif.

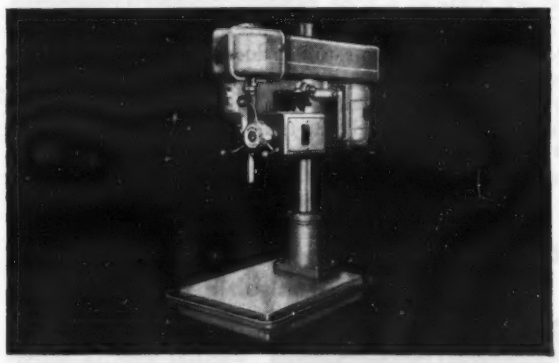
For more details circle NED-565 M on enclosed inquiry slip

INDUSTRIAL WHEELS
have durable polyurethane tread



Exceptional wear resistance and load carrying capacity is reported for the Dynathane tread of these industrial wheels for materials handling equipment. This nonmarking polyurethane material affords maximum resistance to flattening in set position and features close tread-to-wheel bonding. Tread is mounted to an aluminum wheel with a ridged center for permanent bonding strength. This material is also available on company's Pressweld and Forgeweld caster lines. • **Colson Corp.**, 7 S. Dearborn St., Chicago, Ill.

For more details circle NED-566 M on enclosed inquiry slip



NEW! WALKER-TURNER 20" 'POWER FEED' DRILL PRESSES

All 16 models in this new W-T "Light-Heavyweight" line offer revolutionary new mechanical power feed with performance features *never before available* on a standard drill press. Now you can do continuous, heavy duty production drilling faster, easier and with greater accuracy. Ask your W-T Distributor for an *action demonstration* (he's under "TOOLS" or "MACHINE TOOLS" in the Yellow Pages.) For FREE brochure, write: Rockwell Mfg. Co., Walker-Turner Div., Dept. WK45, 400 N. Lexington Ave., Pgh. 8, Pa.

WALKER-TURNER
"LIGHT-HEAVYWEIGHT" MACHINE TOOLS
another fine product by
ROCKWELL

For more details circle NED-567 M on enclosed inquiry slip

NEW WAY
to cut maintenance costs

Rockwell's "Mobile Hypregun" speeds valve lubrication

The unique advantages of Rockwell-Nordstrom lubricated plug valves—their simplicity of operation, tight shut-off, and durability—depend on proper lubrication. Alert engineers know that the few moments spent in lubricating a Rockwell-Nordstrom plug valve pay off in big savings on valve replacement costs.

Now, this simple task is made even easier by the Rockwell "Mobile Hypregun": a valve lubrication center *on wheels* that cuts time and effort. Look at these advantages:

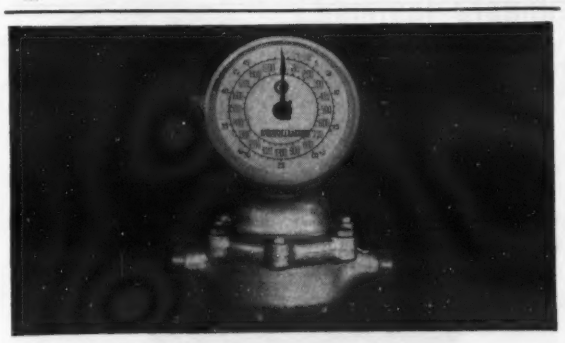
- "Caddy-type" chassis is light, maneuverable.
- Unit accommodates 5-quart Rockwell-Nordstrom lubricant pail; requires less frequent replenishment.
- Enables one man to lubricate hundreds of valves a day.

Use the coupon for more information. Rockwell Manufacturing Co., Pittsburgh 8, Pa., or Rockwell International, S.A., Geneva, Switzerland. Canadian Valve Licensee: Peacock Brothers Ltd., Montreal.

ROCKWELL-Nordstrom VALVES
another fine product by
ROCKWELL

Rockwell Manufacturing Company
Dept. 106M
Pittsburgh 8, Pa.
Please send more information on the "Mobile Hypregun."
Name____ Title____
Company____
Address____
City____ Zone____ State____

For more details circle NED-568 M on enclosed inquiry slip



Introducing a
NEW, low cost industrial meter

Here's good news for industry. Mass production economies using multi-purpose materials have made possible this sturdy meter design which will handle up to 95% of all in-plant metering needs. It measures accurately over 300 liquids in all with the same simple construction. With it you'll save substantially on first cost and save for years by gaining accurate metered records of piped liquids. Available in sizes ½", ¾", 1", 1½" and 2" with your choice of non-reset, reset and vertical dial registers or electric alarm systems and impulse contactors. Write for bulletin PI-666. Rockwell Manufacturing Company, Pittsburgh 8, Pa. In Canada, Rockwell Manufacturing Company of Canada, Ltd., Box 420, Guelph, Ontario.

INDUSTRIAL METERS
another fine product by
ROCKWELL

For more details circle NED-569 M on enclosed inquiry slip

NEW BOOK ON INDUSTRIAL RADIANT HEAT

Do you know the difference between infrared and *far* infrared radiant heating? Why the latter is 90% efficient, practically twice the efficiency of straight infrared?

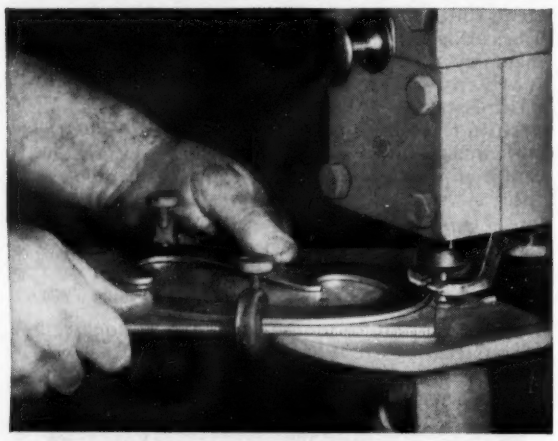
Do you know that *far* infrared is color blind . . . that it heats or dries a red surface as readily as a white or black?

PE-70 is a new book that answers these and similar questions about industrial radiant heating. It details the theory and practice of heating and drying with radiant energy, tells the many advantages of using glass as an energy source, gives specifications on VYCOR® Tubular Heaters and PYREX® Panel Heaters.

Write for a copy to Plant Equipment Sales Department, 5612 Crystal Street, Corning, N. Y.

CORNING GLASS WORKS
CORNING MEANS RESEARCH IN GLASS

▲ For more details circle NED-570 M on enclosed inquiry slip ▲



Cut flat metal shapes quickly, economically with Campbell Nibbling Machines

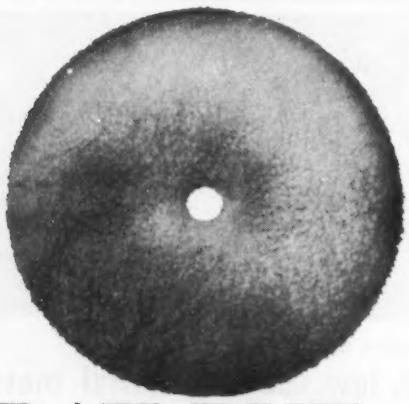
• Campbell Nibblers cut *any* shape 40 to 60 times faster than drilling or filing • both inside and outside cuts • no distortion, fractures or burr • little or no finishing required • low-cost "throw-away" punch and die • capacities 3/32"-1/2" mild steel, 3/16"-1/4" alloy steel—sheet sizes to 72"

WRITE FOR CATALOG describing 7 models of Campbell Nibblers

CAMPBELL NIBBLERS ACCO

Wilson Mechanical Instrument Division
American Chain & Cable Company, Inc.
Dept. 930, 230 Park Avenue, New York 17, N. Y.

▲ For more details circle NED-571 M on enclosed inquiry slip ▲



RAY-BUF...

new all-purpose polishing pad

Polishes faster—Ray-Buf's deep soft pile of 100% virgin wool gives higher luster faster.

Polishes evenly—New design puts tufts in controlled concentric circles, perfectly balanced, to give even polish.

Selected first-quality yarns—Stay fresh and resilient through repeated applications. Give high-quality results.

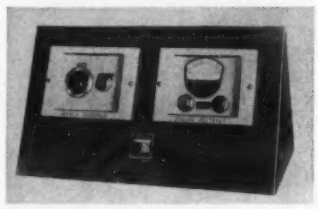
Washable—Tufts are firmly anchored to tough canvas backing. Won't pull out even after repeated washings.

Write for Ray-Buf bulletin, prices, quantities.

Schlegel MANUFACTURING COMPANY
P. O. Box 197, Rochester 1, N. Y. In Canada: Oakville, Ontario

▲ For more details circle NED-572 M on enclosed inquiry slip ▲

DRIVE MOTOR LOAD CONTROL
for process equipment, machine tools

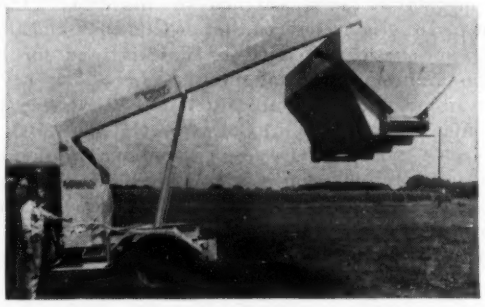


Preset load on the drive motor of process equipment, machine tools, or web handling machinery is maintained by the Loadtrol controller which senses load through a shunt or current transformer in the motor circuit. The signal thus produced is matched against the preset control signal. If they do not match, a command, proportional to the error, is given to the Shaftrol actuator which is mounted on a variable speed drive to change the feed rate to the machine. Actuator can also be mounted on a valve or pressure regulator. Controller features solid state components and can be furnished in an explosionproof enclosure. Motors from fractional to several hundred horsepower can be controlled. • **Jordan Controls, Inc.**, 3235 W. Hampton Ave., Milwaukee 9, Wis.

▲ For more details circle NED-573 M on enclosed inquiry slip ▲

TRUCK MOUNTED BOOM
lifts 3500 lb when extended

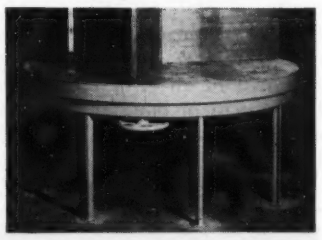
Heavy equipment and materials can be lifted and moved by this hydraulic truck mounted yard boom. It mounts behind the cab of any truck measuring 60



in. or more from cab to rear axle. The boom consists of a telescoping cylinder that extends and retracts while fully loaded. Lifting capacity is 6000 lb when retracted and 3500 lb when extended. The hydraulic pressure is supplied by a power take-off. A double valve is mounted on top of a 5-gal reservoir behind the cab. • **Henderson Mfg. Co.**, Box 60, Manchester, Iowa.

▲ For more details circle NED-574 M on enclosed inquiry slip ▲

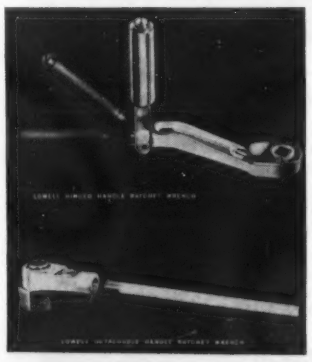
STEEL TURNTABLES
manual and power driven types



Assembly, welding, finishing, inspection, testing, and other semi-automatic processes are uses for standard welded steel turntables. Heavy duty manual and power driven models are made in a wide range of diameters and capacities for flush or top-of-floor installation. Shown is a model for a welding operation. Bolted-on aluminum panels divide the table top into three work areas. A locking device holds the table in any desired position. • **Chase Foundry & Mfg. Co.**, 2365 Parsons Ave., Columbus 7, Ohio.

▲ For more details circle NED-575 M on enclosed inquiry slip ▲

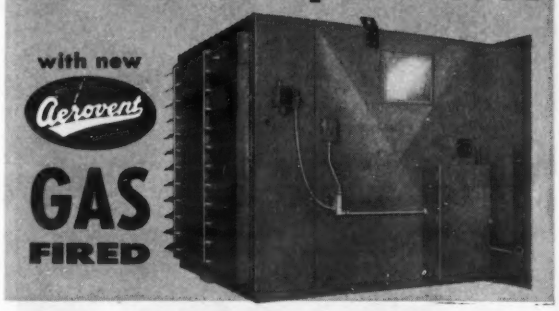
RATCHET WRENCH HANDLES
hinged and detachable types



Increased range of industrial uses for standard Lowell ratchet wrenches results from the use of these hinged and detachable handles. Hinged type allows rapid hand cranking action, plus extra handle length for final tightening. When not in use it folds compactly for storage. Threaded or pinned detachable handles are quickly removed. The pipe handle extension is easily bent to any desired shape in an ordinary pipe bender. Wrenches for special jobs can be made to order. • **Lowell Wrench Co.**, 97 Temple St., Worcester 4, Mass.

▲ For more details circle NED-576 M on enclosed inquiry slip ▲

draft-free comfort uniform temperatures



air make-up units

Temper and filter outside air entering work areas for better production; more efficient heating. Eliminate infiltration of cold air – equalize pressures. Supplied for natural, mixed, manufactured and propane gases. Sizes 36" to 54". Capacities 15,000 to 45,000 cfm with ratings to 4,500,000 btu. Other types for steam and hot water.

Write for Bulletins 850 and 870

Aerovent FAN CO INC. CERTIFIED PERFORMANCE
Ash and Blake Sts. Piqua, Ohio

▲ For more details circle NED-577 M on enclosed inquiry slip ▲

Thru **U.S.Flex** metal* hose and components pass liquids and gases at most exacting pressures and temperatures

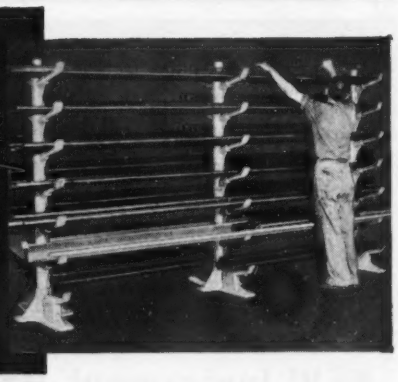
*STAINLESS *BRONZE *STEEL

Write Our Engineering Staff for Free Consultation on Your Problems . . .

U. S. FLEXIBLE TUBING CO.
215 MAIN STREET BARTLETT, ILLINOIS

▲ For more details circle NED-578 M on enclosed inquiry slip ▲

SAVE SPACE • SAVE TIME



Store and remove stock quickly—either by hand, fork truck or overhead crane—using the proved Brown Method for efficient storage. Brown Stock Racks, spaced as required, store more in less space . . . reduce handling from a long end haul to a short lateral movement. Stock is quickly visible for fast selection . . . easily accessible from the sides or ends.

Very low installation costs . . . all components are slip-fitted . . . no bolting or tools needed. Base brackets, trays and other accessories are available to increase usefulness. Both single arm wall racks and double arm racks are available.

Brown Engineering Co., 129 N. 3rd St., Reading, Pa.

■ Get complete data on Quick-Serve Racks. Write today for bulletin.

BROWN FLEXIBLE STOCK RACKS

▲ For more details circle NED-579 M on enclosed inquiry slip ▲

WIRE-TAINERS
Save Costs, Time and Space

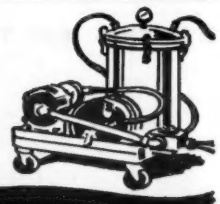
2,000 AND 4,000 LBS. CAPACITY WITH VISIBLE INVENTORY AT ALL TIMES

WIRE-TAINERS are the economical way to handle materials in production, storage, or transit. Available in a wide variety of models and sizes for efficient, economical service. 2 x 2 electro-welded steel wire mesh with a dipped aluminum finish. WIRE-TAINERS stack or fold to save floor space and are engineered to withstand hard usage.

SPRINGPORT STEEL Products Co.
03 SPRINGPORT, MICHIGAN

▲ For more details circle NED-580 M on enclosed inquiry slip ▲

Using TYGON "ATD" *Hot Spray* PAINT



TWO COATS DO THE WORK OF FIVE

Using Tygon ATD Hot Spray Vinyl Paint you deposit a smooth, run-free 5 mil thick vinyl film in just two passes—equal to five coats of cold sprayed paint! The finished job has excellent adhesion and outstanding corrosion resistance.

Since two coats do the work of five — and since no thinners are needed — and since reduced overspray materially reduces paint loss . . . your savings in time and materials are substantial!

Actually, Hot Spray Painting with Tygon ATD offers cost cutting advantages unequalled by any other method.

Write today for Bulletin ATD-9

PLASTICS AND SYNTHETICS DIVISION
U. S. STONEWARE
AKRON 9, OHIO

206E

▲ For more details circle NED-581 M on enclosed inquiry slip ▲

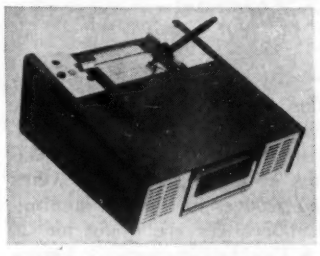
BENDING MACHINES
handle from ½ to 4-in. IPS pipe as well as steel tubes and bars

Low production jobs, one-of-a-kind or experimental parts output, and maintenance work are applications for three models in the Compact line of bending machines. They represent a low initial investment in both machine and tooling. Model 1400 bends up to ½-in. IPS pipe or 1⅛-in. steel tubing. An invertible top assembly permits rapid changeover from clockwise to counterclockwise bending. Floor space required is 4 x 8 ft.

Middle Model C-2 has a size range up to 2 in. IPS and requires a floor space of 2 x 7 ft. Largest Model C-4 bends up to 4 in. IPS pipe, 5 x 5 x ⅜-in. steel angle, and 2⅞-in. solid steel bar. Both hydraulic Models C-2 and C-4 bend to a maximum radius of 36 in. and to 180 degrees, and can be furnished with lifting lugs for cranes, pads for fork lift transport, or wheels. • **Pines Engineering Co.**, 601 Walnut St., Aurora, Ill.

▲ For more details circle NED-583 M on enclosed inquiry slip ▲

TELESCRIBING MACHINES
handle graphic communications over a radius of up to 50 miles

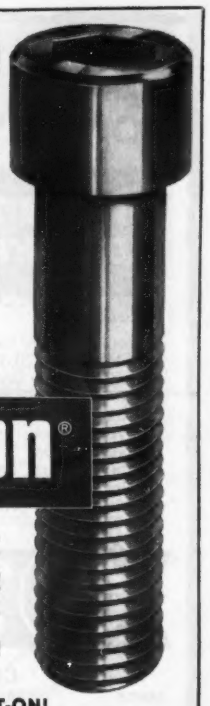


Handwritten or graphic wire communications are effectively handled over a 50-mile radius by Model D telescribing machines. Transmitters and receivers to make up a system can be leased and serviced for total charges as low as $20 per month, per unit. Typical uses include transmitting customer orders from sales desk to warehouse or plant, dispatching trucks, industrial and building maintenance, manufacturing and quality control, and material requisitioning.

Key instrument is the transmitter on which four copies of a message can be created—an original and three carbons. Operator writes with a ball-point pen directly on continuous, automatically fed forms designed for business or supplied in blank sheets. Messages are reproduced instantly on one or many telescribers, as determined by sender. The 22-lb, 12 x 12 x 5½-in. transmitter utilizes solid state circuitry and can be supplied in a case which can be countersunk in desk or work station. • **TELautograph Corp.**, 8700 Bellanca Ave., Los Angeles 45, Calif.

▲ For more details circle NED-584 M on enclosed inquiry slip ▲

QUANTITY QUALITY QUICK



. . . yours with
SOCKET SCREW PRODUCTS by

B-RIGHT-ON®

To get exactly *what* you want, *when* you want it, specify B-RIGHT-ON! Immediate service from selected mill supply houses' stocks. Write for detailed design-dimensional brochure!
COMPLETE SOCKET SCREW LINE!

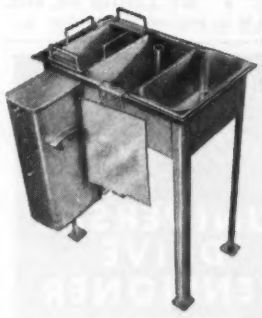
® *You can do better with* **B-RIGHT-ON!**
THE BRIGHTON SCREW & MFG. CO.
1957 Reading Road, Cincinnati 2, Ohio

▲ For more details circle NED-585 M on enclosed inquiry slip ▲

NOW
you can get ULTRA EFFICIENT CLEANING of Small Metal Parts

PALL

METAL PARTS Chemical Cleaner



- **Provides highest degree of surface cleanliness and brightness**
- **Removes encrusted carbon, weld oxidation, brazing flux, varnish and paint**
- **Low first cost, indefinite life with minimum maintenance**
- **No electronic or moving parts**

The PALL Metal Parts Chemical Cleaner is designed for use with hot chemical-detergent solutions, to produce a clean, bright surface on stainless steel and other metal parts. Cleanliness levels exceed a wide range of ultrasonic equipment for such applications as internal tubing surfaces, small holes in fittings, valves, and other complex shapes.

PALL-Clean solutions combine effective chemicals and high efficiency detergents to remove or dissolve carbon, oxides of chromium, iron and nickel, and siliceous (earth-derived) contaminants. Unwanted materials, including visible and invisible clinging foreign matter are rapidly and completely removed.

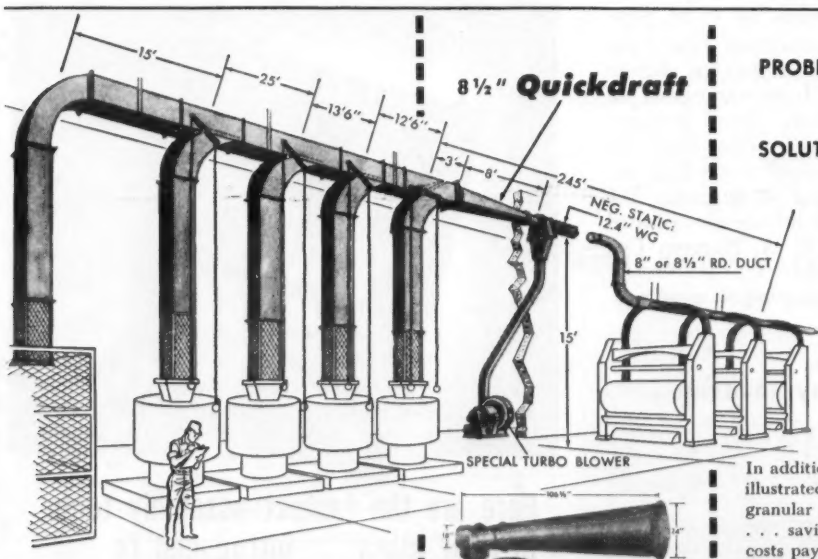
Original and maintenance costs are a fraction of other types of cleaners. This one self-contained unit provides an efficient parts cleaning department.

Write for descriptive literature.

PALL CORPORATION

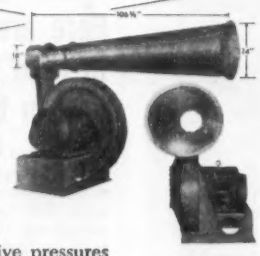
GLEN COVE, NEW YORK ORiole 1-4000

▲ For more details circle NED-586 M on enclosed inquiry slip ▲



VELOCITY: 7,016 FPM.
NEG. STATIC, WITH DUCT CLOSED: 19.2" WG

Schematic of an actual installation in which 3" and 4" paper trim of 140 lb. basis weight (Ream 25 x 38) is continuously removed and conveyed to one of four hydro-pulpers or to screen container by an 8½" *Quickdraft* unit.



Patents 2,722,372 and 2,855,874 and Patents Pending plus Exclusive Foreign Patents.

Quickdraft units with extremely high negative pressures are available in 4½" to 30" diameters in plastic-coated steel, No. 316 Stainless Steel or rigid plastics for corrosion resistance.

PROBLEM: High speed removal and disposal of paper trim

SOLUTION: *Quickdraft* VACUUM SYSTEM

Quickdraft high-pressure vacuum systems have proven extremely successful, efficient and economical in solving materials handling problems. In addition to paper or plastic film trim, the system illustrated could convey any bulk, powdered or granular material that can be moved by air. And . . . savings in labor, down-time and replacement costs pay for *Quickdraft* units in 12 to 24 months!

Quickdraft units also are used for industrial exhaust systems and to increase combustion efficiency in all types of heating plants.

For recommendations on materials handling, please furnish sample of material, distance material to be moved and sketch of proposed installation.

***Quickdraft* CORPORATION**
P. O. BOX 87-L
CANTON 1, OHIO

9012-QD

▲ For more details circle NED-582 M on enclosed inquiry slip ▲

PLAN YOUR OWN CONVEYING SYSTEM

WITH THIS BOOKLET

Shows how you can use *standard* CSI-Farquhar components to lay out your own *custom* conveyor systems. Shows how to go from original idea to a low-cost, high-efficiency conveyor operation . . . gives run-down on basic conveyor types . . . shows typical installations . . . contains charts and work sheets to help you plan.

Get your copy today for the low-cost answer to your conveyor problem.

CSI Farquhar MEMBER CMA

SINCE 1856

CONVEYOR SYSTEMS, INC.
A-B FARQUHAR DIVISION
6451 Main Street • Morton Grove, Ill.
Phone Chicago—JU 8-0200

The complete line of custom and pre-engineered conveyor systems

For more details circle NED-592 M on enclosed inquiry slip

NEW! Waterproof!

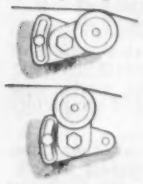
NOW STANDARD ON ALL REGULARLY CATALOGUED JE SOLENOID VALVES

New epoxy-clad coils are line-tested at 2300 volts completely submerged in water. Eliminate coil failure! Impervious to almost anything and everything—condensation, fluid spray, frost, oil, gasoline and other corrosive liquids and vapors. Unlimited indoor or outdoor applications. U.L. listed. Wire, write, or phone:

CONTROLS DIVISION JACKES EVANS MFG. CO.
4427 GERALDINE AVENUE • ST. LOUIS 15, MO.

For more details circle NED-593 M on enclosed inquiry slip

EXACT TENSIONING with adjusting slot



Rotating arm permits controlled tensioning at any point on a 360 degree arc, without changing base.

Reduce horsepower losses through belt slippage, eliminate shock loading on chain drives, increase the life of your equipment with the Universal Drive Tensioner. Two bolt mounting makes it more adaptable to machine frames. For single drives 2" long shaft furnished . . . also available are 3" and 4" long shafts for multiple width drives.

Bronzed bushed sprocket and pulley idlers in 14 standard sizes.

Patent Pending

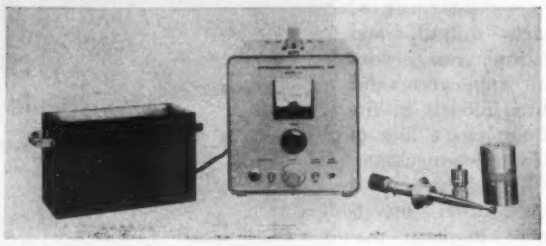
See your distributor or write . . .

BREWER MACHINE & GEAR CO.
1441-43 N. 2nd St., St. Louis 6, Mo.

For more details circle NED-594 M on enclosed inquiry slip

ULTRASONIC GENERATOR for welding, soldering, cleaning

Connections for any of 10 output impedances which may be selected from a broad range to match any requirement are provided on the Inson 100 PW ultra-

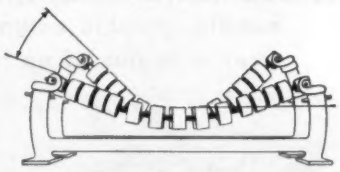


sonic generator. The versatile, compact, 100-w unit permits specifying any nominal frequency from 10 to 100 kc or greater. Applications include ultrasonic welding, soldering, splicing, and sealing of metals and plastics, and cleaning and drilling. Output is continuously variable from zero to full power. Generator may be used with piezoelectric or magnetostrictive transducers. Price is $675. • **International Ultrasonics, Inc.**, 1697 Elizabeth Ave., Rahway, N. J.

For more details circle NED-595 M on enclosed inquiry slip

ADJUSTABLE BELT IDLER increases trough of conveyor belt

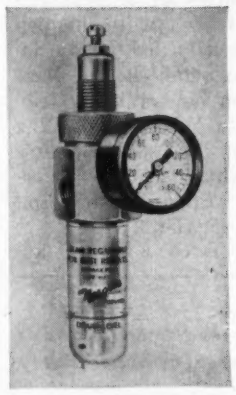
Capacities of conveyor belt systems are increased, reportedly up to 26 per cent, through use of the adjustable Varitrough bracket for Limberoller belt idlers. Trough angle of the belt can be increased from the normal 20 degrees to 45 degrees at any or all points in the conveyor line. This feature assures



uniform contact of idler and belt, makes possible same-angle mating of belt and skirt boards, and eliminates wandering belts due to off-center loads. Adjustability to deep troughs at loading points prevents spilling. Need for skirting grooves in the belt is eliminated. Idlers for the Limberollers are made for 24 and 30-in. belt widths. • **Florida Conveyor & Equipment Co.**, Mulberry, Fla.

For more details circle NED-596 M on enclosed inquiry slip

AIR LINE COMPONENTS filter, lubricate, and regulate

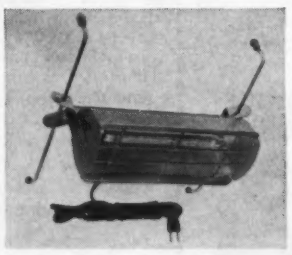


Manual and automatic drain compressed air filters, pressure regulators, diaphragm type relief valves, and compact Micro-Fog lubricators comprise this line of air line products. Any combination of these units for 1/8-in. pipe is available. Regulators and relief valves for air, water, oil, and similar fluids are also made for 1/4-in. pipe. A small, combined filter-regulator removes foreign liquids and solids from compressed air and controls line pressure. Filter, pressure regulator, and Micro-Fog lubricator make up a combination Lubro-Control unit which automatically injects a continuous fog of extremely fine oil particles into the air line to lubricate air-operated devices or machine bearings. • **C. A. Norgren Co.**, 3400 S. Elati St., Englewood, Colo.

For more details circle NED-597 M on enclosed inquiry slip

ELECTRIC HEATER easily installed in any location

Adjustable to direct heat in any direction, the electric Heter can be installed under a desk, at a work bench, in an elevator, or at any location where additional heat is required to keep feet and hands warm. Its aluminum reflector slides up and down



on two rods and also rotates. Unit is furnished with a 9-ft Belden cord with thumb switch, burn preventing guard, and a 2500-hr heating element, replaceable for $1.75. Installation is by drilling two small holes. • **Scott-Rice Co.**, 610 S. Main St., Tulsa, Okla.

For more details circle NED-598 M on enclosed inquiry slip

A TULSA® WINCH CAN TAKE IT!

• RESERVE STRENGTH
• LONGER SERVICE
• WORLD-WIDE DISTRIBUTION

Stronger . . . more durable . . . greater operating efficiency . . . easier installation . . . that's the Tulsa Winch! And Tulsa Winches are so versatile. There's one designed for every purpose. Whether it's the big job or the small job, the Tulsa Winch can more than take it. Immediately available through the world-wide sales-service facilities of our dealers and distributors. Ask to see our line.

TULSA PRODUCTS DIVISION
VICKERS INCORPORATED
Division of Sperry Rand Corporation
751 E. First Street
TULSA 20, OKLAHOMA

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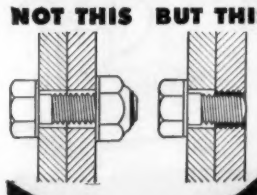
NOT THIS BUT THIS



How to Lock Screws in Threaded Assemblies

without LOCK NUTS, LOCK WIRING, LOCK WASHERS

Meeting military specifications for torque and vibration, the new, one-piece stainless steel (18-8) *HELI-COIL*® Screw-Lock Insert provides permanent, non-corrosive, strip-proof threads, *plus an exclusive internal locking feature* that:

- positively locks screws against loosening under impact and vibration
- protects threads against wearing, galling, and seizing
- eliminates the cost, weight and space of lock nuts or lock wiring and provides designs free of clumsy protruding parts
- offers high re-usability on repeated assembly and disassembly.

You can specify Screw-Lock Inserts for original design, production salvage, maintenance and repair in many materials... ferrous and non-ferrous metals—aluminum, magnesium—etc. Available in many sizes, *including the new miniature 4-40 size.* For more information write:

HELI-COIL CORPORATION
3412 Shelter Rock Lane, Danbury, Conn.
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6975 Jeanne Mance St., Montreal 15, Que.

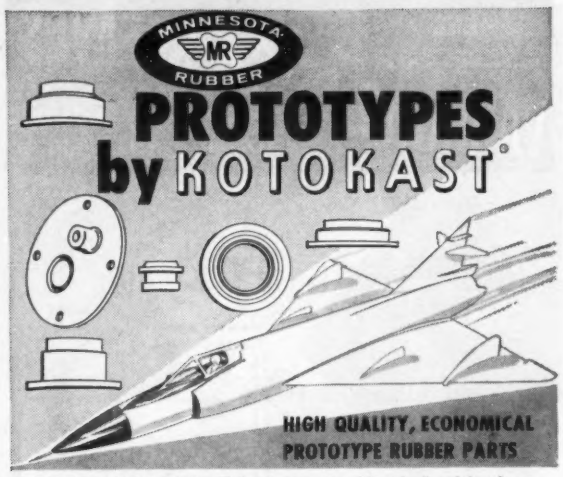
For more details circle NED-600 M on enclosed inquiry slip

Here are the fastest assembly tools in their class . . . introduced to you in this FREE catalog.

If you want to speed up production and cut costs in a wide variety of assembly operations requiring staking, crimping, swaging, riveting, peening as well as marking and punching, write for this new, complete Black & Webster catalog, describing the most modern, fastest all-electric assembly tools in their class. Write:

BLACK & WEBSTER, INC.
570 PLEASANT ST., DEPT. 1, WATERTOWN 72, MASS.

For more details circle NED-601 M on enclosed inquiry slip



CLOSE TOLERANCES—Tolerances are identical with those that will be found on standard production parts.
FAST SERVICE—Usually it will take only hours from the time the order is received to produce twelve prototype parts using PROTOTYPES by KOTOKAST.
ECONOMY—This is the most economical method of producing prototype parts there is.
NO LIMITATION—PROTOTYPES by KOTOKAST has been successfully applied to a wide variety of designs ranging from a simple washer to intricate molded parts.

FOR MORE INFORMATION ON PROTOTYPES by KOTOKAST . . .

MINNESOTA MR RUBBER

WRITE DEPARTMENT 645 3630 WOODDALE AVENUE MINNEAPOLIS 16, MINNESOTA

For more details circle NED-602 M1 on enclosed inquiry slip

ANCHOR ANY DRILLING MACHINE IN SECONDS WITH

NEW VACUUM PAD

TRU-VAC® VACUUM PAD slips under base of practically any portable drilling machine, anchors instantly for accurate, high-speed drilling in reinforced concrete, etc. No anchor holes in floor or walls; no jack to ceiling. Exerts approximately 1000 actual pounds vacuum; instantly releases for rolling to next location and re-anchoring. Quickest set-up ever. Write for Bulletin SC-7.

Write for Distributor's name and literature

TRUCO MASONRY DRILLING DIVISION
WHEEL TRUEING TOOL COMPANY
161-3200 W. Davison, Detroit 38, Mich.
575 Langlois, Windsor, Ont.

Write for New Catalog

HALF-A-CENTURY OF INDUSTRIAL DIAMONDS

For more details circle NED-603 M1 on enclosed inquiry slip

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TAKE THE "RUSH" OUT OF RUSH DRAWINGS WITH CHART-PAK TAPE! You can really bat out drawings with Chart-Pak pressure-sensitive tapes and sheets. You don't ink-in lines, bars, shapes and symbols. You *tape* them in! Fast! Chart-Pak materials reproduce beautifully, and stay stuck — even after repeated trips through hot reproduction machines. Yet you can peel them off slick and quick to make corrections. *Write for free folder,* "Visualization Made Easier." It helps you take the drudgery out of drafting.

DON'T DRAW IT . . .

TAPE IT WITH

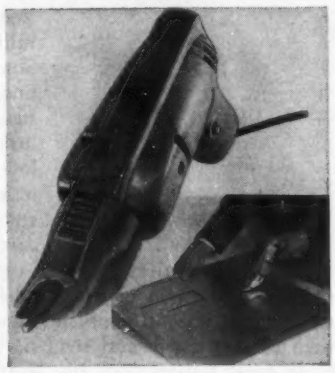
CHART-PAK

122 RIVER ROAD, LEEDS, MASS.

Dealers in all principal cities

For more details circle NED-604 M1 on enclosed inquiry slip

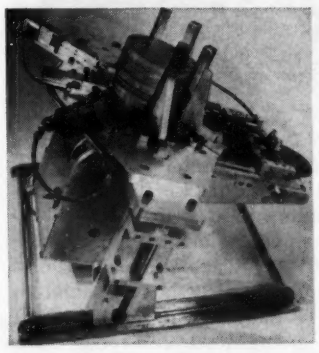
SHEET METAL SHEAR
cuts up to 18-gage mild steel



All-in-one Docken sheet metal shear is now available with its own power unit and incorporates new design features. Tool operates with powerful scissor action and will cut up to 18-gage mild steel sheet and up to 1/16-in. laminated plastics. It makes as small as 2-in. radial cuts, as well as square and rectangular hole cuts from a ¼-in. starting hole. Several popular brand ¼-in. portable drills can be used as an alternate power source. • C. W. Lind Co., 3403 Penn Ave. N., Minneapolis 11, Minn.

For more details circle NED-605 M1 on enclosed inquiry slip

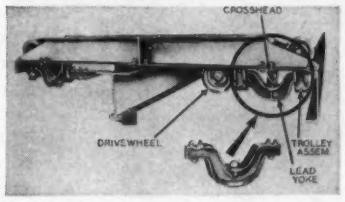
PRESS FEEDER
for polished or oiled metal blanks



Flat metal blanks that stick together because of die lubricants or highly polished surfaces are fed one at a time by the Clark automatic press feeder. Part separation without damage occurs through both lateral and horizontal movement of the bottom blank of a top-load magazine. An adjustable speed conveyor maintains control of ferrous or nonferrous blanks into the die nest without bounce-back or misalignment. The separating device is standard in all feeders for 1½ to 16-in. diameter parts. Feeder action is provided by a hydraulic system, cam actuated by chain drive from the press crank at speeds up to 150 parts per minute. • Clark Industries, Box 314, Delaware, Ohio.

For more details circle NED-606 M1 on enclosed inquiry slip

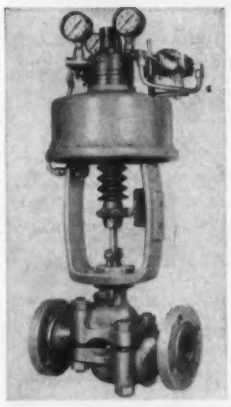
CRANE END TRUCK
articulates during travel



Flexibility formerly obtained by use of floating runway suspensions is provided in this overhead crane end truck which gives full articulation during travel. Its use permits runways to be rigidly supported. End truck is available for all Spanmaster under-running, motor driven cranes with 1 to 10-ton capacities. The eight-wheel truck consists of a pair of flanged wheels mounted on a trolley assembly, and a pair of these assemblies mounted at either end of a load yoke. Ball and socket construction affords flexibility in all directions to assure straight line transmission of forces and equal loading on all wheels. • Jervis B. Webb Co., Spanmaster Div., 8951 Alpine Ave., Detroit 4, Mich.

For more details circle NED-607 M1 on enclosed inquiry slip

SPLIT-BODY VALVES
allow free passage of viscous fluids



Addition of a series of split-body valves and a cylinder actuator makes possible the intermixing of diaphragm and cylinder actuators with split bodies and globe bodies to match specific applications. The valves are available in straight-through, angle, and corner types with fixed or separable flange construction. They permit free passage of even highly viscous fluids. Features include clamped-in seat ring, metal or Teflon guiding, non-lubricated V-ring packing, and contoured equal-percentage linear or quick-opening plugs. • Minneapolis-Honeywell Regulator Co., Valve Div., Ft. Washington, Pa.

For more details circle NED-608 M1 on enclosed inquiry slip

Cool Cutting!

SPITFIRE Grinding Discs

Cool, Clean Cutting Action makes use of the entire surface area of Aluminum Oxide Discs . . . speeds up the toughest grinding and sanding operations . . . adds extra life to Spitfire Discs for real job-after-job economy!

Tougher and Safer, Too! Spitfire Discs feature built-in barrier protection plus reinforced edges to stop limpness and excessive grit loss . . . need less pressure and fewer passes . . . actually provide a **25% greater safety margin** for smoothing away snags and hang-ups!

All Types, All Sizes! Available in "Special," "Standard," and "Heavy Duty" discs for every type of job from light gauge metal sanding and polishing to high speed finishing operations. Grit sizes 16 through 180. Disc diameters include 6", 7", 8" and 9⅛" with ½" and ⅞" arbor holes.

Write for "Spitfire" folder today!

JEWEL BRAND

COATED ABRASIVES

Belts • Rolls • Sheets • Discs • Specialties

ABRASIVE PRODUCTS, INC.
South Braintree 85, Massachusetts

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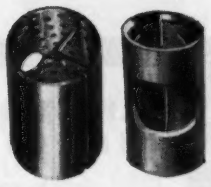
PRECISION THRUST WASHERS

FORMED BUSHINGS



. . . economy and precision in almost endless variety!

Precision Thrust Washers: solid bronze, or bronze-on-steel, one or both faces. Flat, spherical or special shapes. Keyways, tabs, coined oil grooves, any design.

Formed Bushings: solid bronze, steel or aluminum; or bi-metal, steel and bronze, babbitt, copper or aluminum. Oil holes, slots, grooves, whatever your design calls for. Straight, lock or special seams.

For design guide catalogs on both, or for engineering assistance, write Federal-Mogul Division, Federal-Mogul-Bower Bearings, Inc., 11079 Shoemaker, Detroit 13, Mich.

FEDERAL-MOGUL sleeve bearings bushings spacers thrust washers DIVISION OF FEDERAL-MOGUL-BOWER BEARINGS, INC.

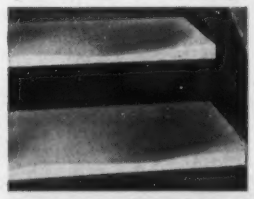
For more details circle NED-610 M1 on enclosed inquiry slip

HOW TO ***SAFETY-IZE** WORN STAIRS.. just this easy

Restore slippery dangerous stairs in a few hours with

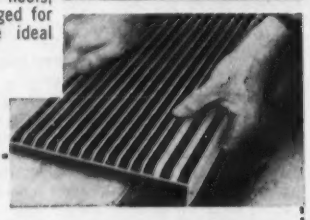
*** SUPER STAIRMASTER**

the new heavy duty aluminum safety tread that solves commercial, industrial, institutional stair problems this fast –



1. For 'dished' wood, concrete, marble, slate, etc. stairs
2. Simply level tread area with plastic compound
3. Apply Stairmaster — and stair is ready to use

Abrasive 'Traffic-Flow' design has magnetic-like grip for safe, sure traction even under wet or oily conditions. Safety for ladies' high heels, easy to sweep or vacuum, rugged for long wear — Stairmasters are ideal for busy stairs.



WOOSTER PRODUCTS Inc.
S-16 Spruce St.
WOOSTER, OHIO

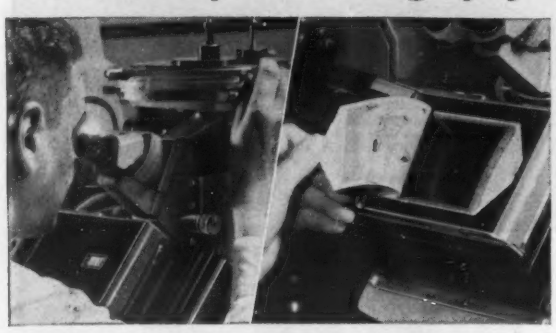
APPROVED & RECOMMENDED BY SAFETY ENGINEERS

GUARANTEED BY WARRANTY BOND

Get full details on stair repair
Company_____
Address_____
City_____ State_____
S-16 Name_____

For more details circle NED-611 M1 on enclosed inquiry slip

60 second photomicrography



with the AO METALLOGRAPH

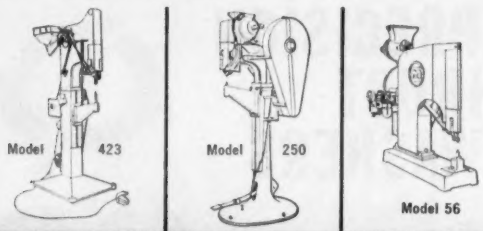
AO's "Workhorse" Metallograph is combined with the Polaroid Land Camera to give a combination that is unbeatable for quick, precise visual observations and "picture-in-a-minute" photomicrography.

Focusing is automatic while you examine the specimen through the eyepieces. You simply *snap* the shutter...*see* the Polaroid print in just 60 seconds.

The Metallograph camera aperture also will accommodate a regular 5" x 7" fixed camera back. Or, you can also use 4" x 5" and 3¼" x 4¼" plates or cut film by means of adapter film or plate holders.

American Optical COMPANY
INSTRUMENT DIVISION, BUFFALO 15, NEW YORK

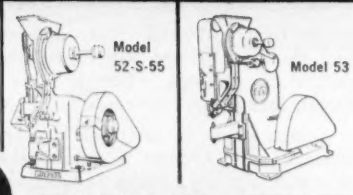
▲ For more details circle NED-612 M on enclosed inquiry slip ▲



MILFORD'S FLEXIBLE RIVETER LINE CAN HELP CUT YOUR ASSEMBLY COSTS

Milford adapts to your production line with a wide range of automatic riveters designed to cut assembly costs. Count on Milford's versatility to come up with answers you need at cost savings over other fastening methods.

Write for more information.



THE MILFORD RIVET & MACHINE CO.
MILFORD, CONN. • HATBORO, PENN. • ELYRIA, OHIO • AURORA, ILL. • NORWALK, CALIF.

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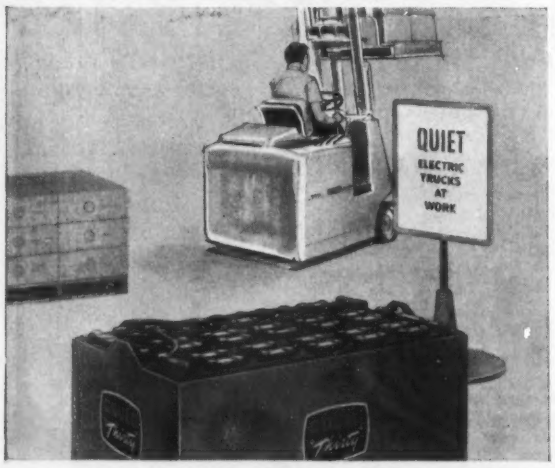

Electric Trucks REDUCE NOISE LEVELS

The quiet operation of battery-powered electric trucks eliminates distraction and annoyance to workers performing other production work. Also, quiet operation is an outstanding advantage when it is necessary to give verbal instructions to truck operators or to signal them by a dispatch system. Finally, quiet electric truck operation is a valuable safety factor.

Electric truck users generally agree, too, on Gould Batteries for longer life. With the vital new Silconic Plate, Gould Batteries offer up to 25% longer life.

Write for booklet "Why We Use Battery-Electric Industrial Trucks." Gould-National Batteries, Inc., Trenton 7, N. J. In Canada, write to Gould-National Batteries of Canada, Ltd., 1819 Yonge Street, Toronto, Ontario.

More Power to you from GOULD

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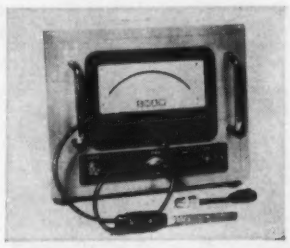
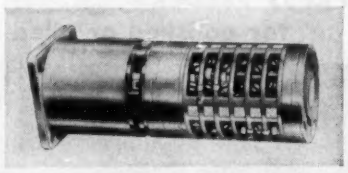
DEWPOINT METERS
for continuous or random sampling



Sensitivity of 1 part in 10 million is built into the A+ Shaw line of relative humidity and dewpoint instruments. Accurate measurements of dewpoint as low as −150° C are made in a few seconds, unaffected by flow rate or pressures to 2000 psi. They are suited for continuous read-out or random sampling of atmospheres encountered in dry gases, catalytic cracking, semiconductor manufacture, chemical making, textile drying, and steel hardening, among others. Four scale calibrations are available on the 110-120 v ac instrument. • **Atkins Technical Inc.**, 1276 W. Third St., Cleveland 13, Ohio.

▲ For more details circle NED-615 M on enclosed inquiry slip ▲

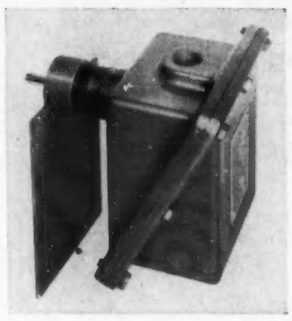
ROTARY SOLENOID DRIVE
affords several switch control means



Any Blue Line switch, regardless of contact development and configuration, can be remotely controlled by this rotary solenoid drive. It drives a control switch in single steps, continuous steps, or as a master-slave for completely automatic operation. The solenoid is actuated by any device that transmits an electric impulse, including limit switches, pushbuttons, manual selector switches, timers, and pressure switches. Size 1 (R-100) for driving B16 and C16 switches rated at 20 amp, 600 v ac, has a maximum of 12 positions. Size 2 (R-200) will drive A16, C25, C40, and C63 switches, giving a current range from 20 to 63 amp at 600 v ac. Up to 18 positions are driven as standard, or up to 24 for special applications. • **American Solenoid Co.**, U. S. Highway 22, Union, N. J.

▲ For more details circle NED-616 M on enclosed inquiry slip ▲

SHAFT ROTATION DETECTOR
operates with high speed variation

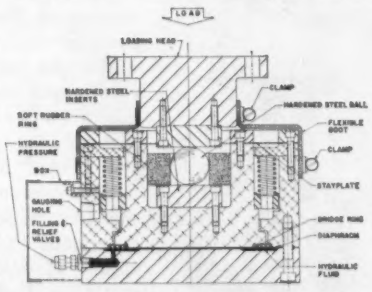


Conveyors, rotating kilns, mills, driers, and other processing equipment are applications for the Flo-Motion shaft rotation detector. The self-contained electronic device automatically stops rotating equipment whenever excessive speed variation occurs. Model M300 permits a relatively wide variation in shaft speed before signalling stoppage or slowdown. Model M301 is used where shaft speed must be closely watched. The range of detection may be specified to suit the application. Useful on totally enclosed, underground, or remote machinery, the device will detect speed variations as small as 1 rpm. Dust and explosionproof housings are offered. • **Flo-Tronics, Inc.**, Electronic Controls Div., 1420 Zarthan Ave., Minneapolis 16, Minn.

▲ For more details circle NED-617 M on enclosed inquiry slip ▲

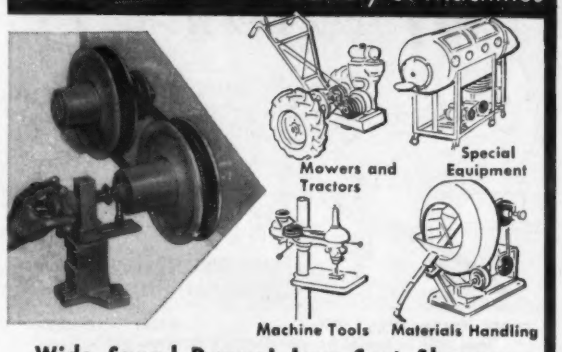
HYDRAULIC LOAD CELL
for weighing tanks and bins

Model EC-RB hydraulic cell for the chemical and food processing industries in weighing tanks and bins operates on the hydraulic piston and cylinder principle. Rolling-ball head facilitates alignment of loading head and accommodates expansion or contraction of tank or bin. Square base for the cell occupies less space than previous round base. Metal box on the side contains filling and relief valves. Cell filling method has also been redesigned to prevent harmful pinching of feeler gage used to measure the fill. • **A. H. Emery Co.**, Pine Street, New Canaan, Conn.



▲ For more details circle NED-618 M on enclosed inquiry slip ▲

SPEED SELECTOR
VARIABLE PITCH SHEAVES
Control Speeds on Variety of Machines



Wide Speed Range! Low Cost Sheaves

Speed Selector Sheaves can give your machines or equipment extra wide-range speed control on fixed centers. Efficient, rugged, simple to use — low in cost! Write for Illustrated Bulletin.

CATALOG FREE! WRITE TODAY

SPEED SELECTOR INC.
P.O. BOX 312-N • CHAGRIN FALLS, OHIO

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WHEREVER SOMETHING STICKS

Modern Packaging Engineers Use

IMS
SILICONE FLUID SPRAY

WHEREVER ANYTHING STICKS TO METAL SURFACES—ON FILM SEALERS, CRIMPER JAWS, EMBOSSING ROLLS, PANS; STAMPING, FORMING DIES—MOLDS OF ALL KINDS

SIMPLY SPRAY ON THIS PURE SILICONE FLUID COATING
And your sticking problems are over!

The most economical way to apply costly Silicone Release Agents!

SAFE — NON-TOXIC
CLEAN — LONG LASTING

Handy Self Dispensing Can Has No-Fumble, Speedy Spray Head

PRICES (Delivered)
Sample Can $2.00
Per Unbroken Dozen $18.00
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INJECTION MOLDERS SUPPLY CO.
17601 So. Miles Rd. Cleveland 28, O.

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SAFETY GRIP-STRUT

Patented

STAIR TREADS

for greater safety • for greater economy

Use Safety GRIP-STRUT stair treads throughout your plant, on your manufactured products for greater anti-skid protection. All one piece of material with open area in excess of 55% total area, easy to flush clean, greater strength with less weight, in steel or aluminum.

Available at Globe Distributors in all principal cities. Consult yellow pages in your phone book under "stair treads."

PRODUCTS DIVISION
THE GLOBE COMPANY
4002 S. PRINCETON AVE. • CHICAGO 9, ILL.

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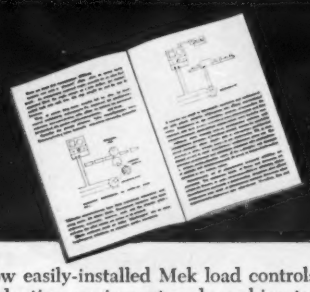
FREE BOOK tells how to...

MAKE YOUR PRESENT EQUIPMENT PRODUCE MORE!



Read how easily-installed Mek load controls boost output of production equipment and machine tools. Simple, low-cost Mek standard controls keep machinery operating economically at maximum safe loads—react instantly at slightest hint of overload to protect equipment, tools, dies, material. Enable you to speed up machining, feeding, grinding operations—control stamping, crushing, polishing, and mixing.

Learn how Mek load controls increase production flow and protect machinery in hundreds of plants from metal fabricating to food processing.

Send today for free illustrated book of actual plant applications!

MEK
Machinery Electrification, Inc.
66 Hudson St., Northboro, Mass.

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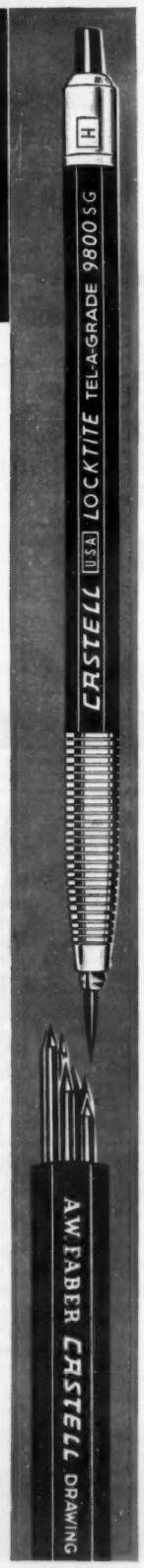
You pay so little more for unequalled A.W.Faber-CASTELL LOCKTITE quality...



6 good reasons WHY your choice should be LOCKTITE TEL-A-GRADE 9800 Lead Holder

1. Functional no-slip grip —*reduces finger fatigue.*
2. Gun-rifled clutch —*grips the lead like the jaws of a bulldog.*
3. Easy action push-button —*no thumb strain.*
4. Perfect balance —*feels like a wood pencil.*
5. TEL-A-GRADE degree indicator.
6. Featherweight lightness —*effortless to hold.*

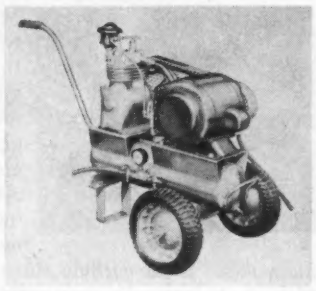
Another important plus in LOCKTITE 9800 is decades of manufacturing know-how, backed by a guarantee. *If it ever happens that any part of a LOCKTITE Holder breaks in normal usage, the entire holder will be replaced free of charge.* Buy quality, buy CASTELL. See your dealer today.

#9030 CASTELL Black Gold Refill Leads are ideally mated with LOCKTITE. This superb lead is available in full range of degrees: 7B to 10H. Draws perfectly on all surfaces, including Cronar and Mylar base films.

A.W.Faber-Castell
Pencil Co. Newark 3, N. J.

▲ For more details circle NED-623 M on enclosed inquiry slip ▲

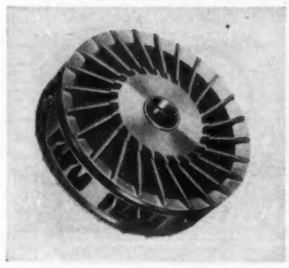
PORTABLE AIR COMPRESSORS
1, 1½, and 3-hp units offered



Constant pressure suction valve unloaders can be quickly set for any pressure from 50 to 150 psi in these portable tank-mounted air compressors for heavy-duty painting and air tool operations. Series consists of 1-hp and 1½-hp electric, and 3-hp gasoline engine models with displacement from 6 to 9.6 cfm. All models have heavy-gage 3 or 10-gal tanks, twin-cylinder compressors, extra large rubber-tire wheels, and belt guards. A 12-in. four-blade flywheel insures efficient cooling. • **Saylor-Beall Mfg. Co.**, St. Johns, Mich.

▲ For more details circle NED-624 M on enclosed inquiry slip ▲

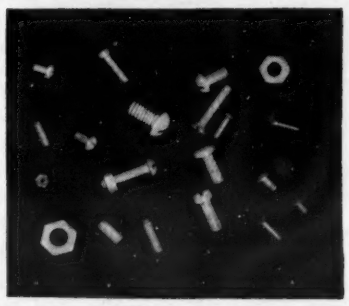
CONSTANT SPEED REGULATOR
holds speed despite varying loads



Variable input drive speeds are converted into a constant output speed by the Speed Monitor which incorporates a silicone fluid coupling. The governed speed is predetermined between 1000 and 6000 rpm and is controlled within ±5 per cent regardless of load variations. Ratio of drive to driven speed is as high as 4:1 for continuous duty. The self-cooling unit is applicable to the speed regulation of compressors, pumps, supercharger blowers, dc generators, and flexible drive cables. Applied to drive or driven shaft, it costs $50 for most models. • **Knechts Inc.**, Box 1037, Springfield, Oreg.

▲ For more details circle NED-625 M on enclosed inquiry slip ▲

NYLON FASTENERS
quick delivery of small lots assured



Prompt delivery of small lots of nylon machine screws, nuts, washers, and screw insulators is assured by a new company service. Fasteners are packaged in units of 10 and 100 for repair, experimental, or prototype use. Machine screws with binding, round, fillister, flat, oval, washer, and set screw heads are offered in 60 lengths in thread sizes from No. 0-80 through ¼-20. Hex nuts in 10 thread sizes range from No. 2-56 through 5/16-18. Five washer sizes range from No. 4 through ¼ in., and six screw insulator types, from No. 4 x 3/16 through ¼ x ⅜ in. Special assortment of 100 is available for $3. • **Machine Parts Supply Co.**, 13 E. 37th St., New York 16, N. Y.

▲ For more details circle NED-626 M on enclosed inquiry slip ▲

UTILITY VEHICLE
has three or six-speed transmission

Weighing only 1100 lb, the Bug multipurpose utility vehicle can be used for transporting materials and personnel, running errands, or as a tractor. Its 48-in. width and 105-in. length enable it to travel in narrow factory or warehouse aisles. Standard car has a three-speed transmission and is powered by a 35-hp, liquid cooled, four-cylinder Crofton gasoline engine. An optional six-speed transmission permits it to pull more than ten times its own weight, and still carry a ½-ton payload. Brawny Bug model has six-speed compound transmission, Powr-Lok differential, 9.00 x 10 low pressure tires, and a heavy duty crash pan. Optional equipment includes various tire sizes, dual rear wheels, glass fiber cab with metal sides and doors, power take-off unit, rear seats, tow bar, folding canvas top, and trailer hitch. • **Crofton Marine Engine Co.**, 888 Gull St., San Diego 1, Calif.

▲ For more details circle NED-627 M on enclosed inquiry slip ▲

WEAR RESISTANT THOMSON **60 Case** hardened and ground

AVOID the HIGH COST and difficulty of fabricating long, hard & straight parts by conventional methods...

SHAFTS, ROLLS, GUIDE RODS and other long-round parts ELIMINATE WEAR and REDUCE COST

ADVANTAGES of 60 Case
- COST REDUCTION
- HARD BEARING SURFACE
- NICK- & DENT-PROOF
- ACCURATE DIAMETERS
- GROUND FINISH
- STRAIGHT PARTS
- DELIVERY FROM STOCK
- ADDED STRENGTH
- UNIFORM HIGH QUALITY

60 Case material has a Rockwell 60C surface hardness which is essential to reduce wear.

Big savings are offered over conventional methods which are plagued with erratic warpage, straightening and resultant grinding problems. Finished *60 Case* parts frequently cost less than the scrap losses that result from conventional methods.

Stocked in ¼" to 4" diameters. Available with or without special machining. *Write for literature and name of your local representative.*

TYPICAL 60 Case PARTS
GUIDE RODS, SHAFTING, ROLLS, TRAVERSE RAILS, PISTON RODS, ARBORS, LEADER PINS, TIE RODS, KING PINS, AXLES, CONTROL RODS, GUIDE POSTS, MANDRELS, BEARING ROLLERS, SPINDLES

For emergency needs call collect MAnhasset 7-1800

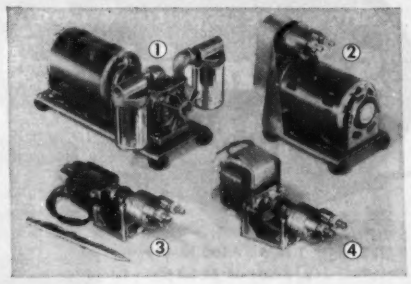
THOMSON INDUSTRIES, Inc.
Dept. C2, Manhasset, New York

PARTS HARDENED to 60 C...increase life...reduce cost!

▲ For more details circle NED-628 M on enclosed inquiry slip ▲

NOW!

2 types — 3 capacities — from .35 to 1 c.f.m. — up to 24" vac. or 25 p.s.i.g. Choice of motors; a.c. and d.c.



GAST OIL-LESS MINIATURE VACUUM PUMPS — COMPRESSORS

For Controls, Instruments, Lab and Business Machines

Have a portability problem? Or limited space? You can provide moderate vacuum or pressure of surprising capacity with these compact Gast Air Pumps! They're completely oil-less. Carbon vanes lubricate themselves. *Air is oil-free!* Positive displacement rotary design is simple and dependable. Numerous motor choices:

(1) Model 1030 (also 0630), 1/12 or 1/20 h.p. split phase.
(2) Model 0330, belted to 1/20 h.p. split phase a.c.
(3) Model 0330, direct coupled to series motor a.c. or d.c.
(4) Model 0330, coupled to shaded pole motor a.c.

If your products require compact, light weight components, investigate Gast semi-miniature Air Pumps!

WRITE TODAY FOR BULLETIN M-OVP

Gast Manufacturing Corp., P.O.Box 117-R Benton Harbor, Mich.

GAST ROTARY "Air may be your answer!" • AIR MOTORS TO 7 H.P. • COMPRESSORS TO 30 P.S.I. • VACUUM PUMPS TO 28 IN.

▲ For more details circle NED-629 M on enclosed inquiry slip ▲

CLOSURES

- Metal or Plastic Caps or Plugs to protect threads, tubes, machined parts, reamers, cutters, tools.
- Protect against thread damage, dust, dirt, and moisture.
- For inside and outside application. All sizes. Immediate delivery.

Clover closures are made in metal and tough plastic polyethylene. They are made in caps, plugs and special shapes to fit parts tightly, offering completely sealed protection during manufacture, shipping and storage. Backed by years of closure experience. Write for low prices and complete information.

Send coupon today!

Gentlemen: Please send samples and prices of closures in Polyethylene ☐ Aluminum ☐

Name.....
Address.....
City.....

CLOVER INDUSTRIES, INC. 601 Young Street Tonawanda, N. Y.

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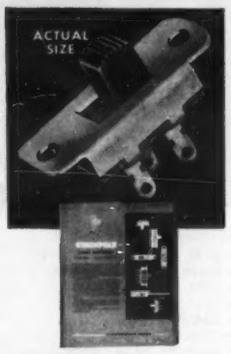
6 AMP.

U. L. RATED

Slide Switch

Truly inexpensive . . . only 1⅜"l by 17/32"w . . . new Stackpole Type SS-36-1 handles a full 6-amps at 125 volts ac. Use it on appliances, power tools, instruments — wherever a heavy-duty SPDT or SPST switch is called for. 9 attractive trigger knob colors to match your styling needs.



The Most Complete Line

Dependable, low-cost Stackpole Slide Switches are made in over 15 basic types—0.5-6 amp ratings, 1-4 positions, 1-3 poles, maintained or momentary contact, pushbutton-operated, etc. Printed wiring terminals, shields, colored triggers optional.

NEW! SLIDE SWITCH BULLETIN contains details on the complete Stackpole line. Write today!

STACKPOLE

Electronic Components Division STACKPOLE CARBON COMPANY, *St. Marys, Pa.*

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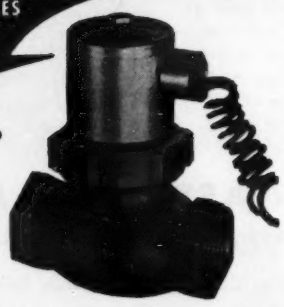
Check these prices on Gould Type M

Solenoid Valves

TYPICAL USER NET PRICES
F. O. B. FACTORY



SIZE	1 to 5	100 to 499
½"	$15.40	$11.15
¾"	18.50	13.60
1"	24.25	18.50
1½"	48.00	42.40

2-Way • General Service
Packless • Normally Closed

Sizes ⅜" to 3" • Temperatures to 250° • Pressures to 400 psi • Molded epoxy resin water-proof coils • Unbreakable piston rings • No damaging hammer • Easy-off "O" ring bonnet construction in sizes ⅜" thru ¾" • High temp coils and explosion proof housings available. Immediate delivery. Ask for Bulletin 600-M.

SOME OTHER TYPES OF GOULD SOLENOID VALVES

D—Adjustable flow control, adjustable cushioning control to reduce shock, manual opening. **HV**—Four independent controls—opening, closing, flow, manual opening. **G**—Stainless, fractional ports, pressures to 1,000 psi. **GX**—All 316 stainless, fractional ports. **K**—Stainless, ½" to 2". **MDW**—Direct acting. NOTE: Special assemblies for exacting requirements.

J. D. GOULD CO. · 4707 MASSACHUSETTS AVE. · INDIANAPOLIS 18, IND.

GOULD SOLENOID VALVES — VELVETROL

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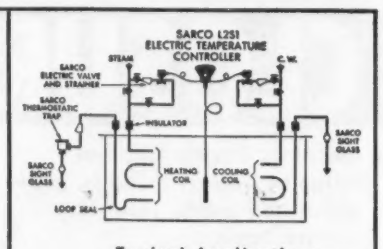
Sarco Electric Indicating Temperature Control



Typical Applications
Plating tanks, processing vats, kettles, chemical tanks, etc.

Stop losses caused by uncertain

TEMPERATURE CONTROL

Hit-or-miss manual temperature control is uncertain, wastes steam and water. In processing, it's bound to cause uneven or inadequate heating, slow-downs, interruptions.

Product quality suffers. Rejects mount. Costs go up.

You can end these headaches by turning over the responsibility of temperature control to always-reliable Sarco ELECTRIC INDICATING temperature regulators.

Simple, inexpensive. No gadgets for a technician to read or repair.

Adjustable, indicating. Responsive to temperature changes of ± ½°F.

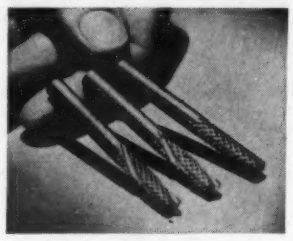
Offer many sequence combinations such as step heating.

Write for Bulletin 1025 to Sarco Company, Inc., 635 Madison Ave., New York 22, N. Y. 4181

SARCO — SARCO COMPANY, INC. 635 MADISON AVE., NEW YORK 22, N. Y. PLANT: BETHLEHEM, PA

▲ For more details circle NED-633 M on enclosed inquiry slip ▲

PLASTIC-CUTTING TOOLS
line includes mills, saws, routers

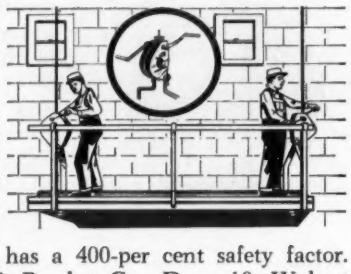


Made of solid carbide to withstand abrasive qualities of high-hard plastics, Dixie cutting tools can be used on reinforced fiber glass, melamine, Plexiglas, and laminates. Routo-mills for routing, milling, and trimming are made in 1/16 to 1½-in. diameters. Solid carbide slitting saws have diameters of ¼ to 1½ in. Routers with one or two flutes, right or left hand, have ⅛ to ½-in. cutter diameters and ½ to 1-in. flute lengths. • **Dixie Tool Industries, Inc.,** Bridgeport, Mich.

▲ For more details circle NED-634 M on enclosed inquiry slip ▲

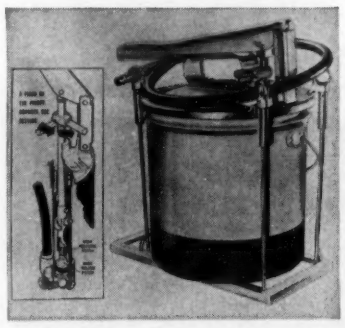
SUSPENDED CABLE SCAFFOLD
dual handle facilitates winding

Cable drum and mechanism of the Laho suspended cable scaffold outfit are enclosed in a housing to protect the mechanism. A dual bicycle type winding handle makes it easy to wind the scaffold up and down. A Fixator brake automatically locks instantly when winding is stopped. The steel cable will carry a 1100-lb load. The UL-approved, European-built unit has a 400-per cent safety factor. • **Newark Ladder & Bracket Co.,** Dept. 10, Walnut Avenue, Clark, N. J.



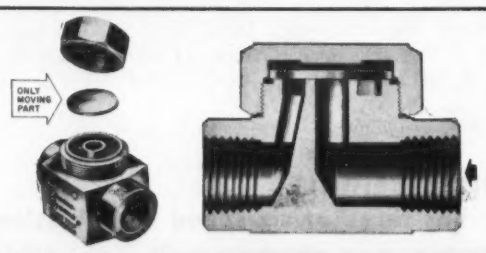
▲ For more details circle NED-635 M on enclosed inquiry slip ▲

LUBRICANT PUMP
for low and high pressure delivery



Multipurpose industrial lubricants are dispensed by the Model 7138 VP pump with low or high pressure delivery up to 5000 psi from the same compact unit. Actually two pumps in one, the portable, manually operated unit delivers 1 cu in. per stroke on volume operation. The high pressure is for any bearing requiring pressure lubrication, and the high volume delivery is for gear housings, large bearings, filling oil reservoirs, and centralized lubrication systems. • **Stewart-Warner Corp.,** Alemite Div., 1826 Diversey Parkway, Chicago 14, Ill.

▲ For more details circle NED-636 M on enclosed inquiry slip ▲



SIMPLEST STEAM TRAP

Trouble-free design practically eliminates maintenance of TD-50

1. *No complicated mechanism!* Look at the cross-section above. Not a pin, lever, gasket or bucket in sight! There aren't any . . . in the practically trouble-proof Sarco TD . . . simplest of all steam traps.

2. The kinetic energy of steam closes the valve. No mechanism needed.

3. Only 3 simple, rugged parts (not assemblies) . . . made of stainless steel. Only 1 moving part.

4. No narrow channels to choke. No gaskets to leak.

Ask for 60-day trial

We'll see that you receive a Sarco TD steam trap and strainer for free trial. No cost or obligation. Buy only if completely satisfied. Advise size—⅜, ½, ¾, or 1"—and use.

Sarco Co., Inc., 635 Madison Ave., New York 22, N. Y. 4328

SARCO — SARCO COMPANY, INC. 635 MADISON AVE., NEW YORK 22, N. Y. PLANT: BETHLEHEM, PA

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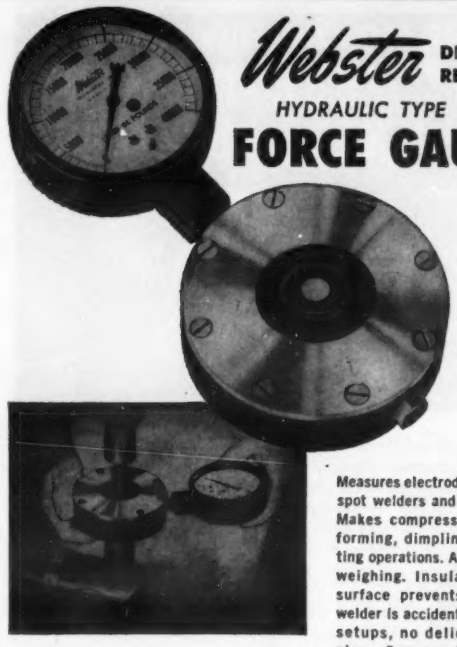

Webster DIRECT READING
HYDRAULIC TYPE
FORCE GAUGES

Measures electrode pressure on spot welders and roll welders. Makes compressive tests on forming, dimpling and upsetting operations. Also useful for weighing. Insulated contact surface prevents damage if welder is accidently fired. Easy setups, no delicate mechanisms, 5 ranges: 0-1000, 6000, 10,000, 20,000, 40,000 lbs. 3½" diameter gauge with accuracy to 1%. Reads directly in pounds—no conversion scales. Write for details.

Webster INSTRUMENT, INC.
Dept. N, 11856 Mississippi Ave., Los Angeles 25, California

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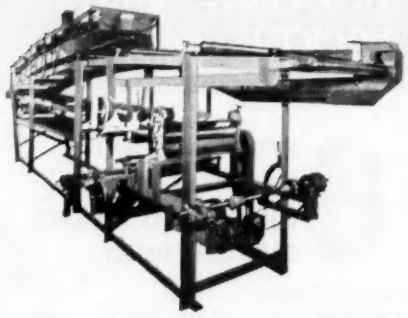
POTDEVIN SOLVES
another coating problem:

This automatic coater was engineered for a prominent manufacturer of labels to apply pressure sensitive adhesive to one side of a roll of cloth, dry the adhesive and rewind the cloth . . . all in one automatic operation.



Solving Coating Problems Since 1893

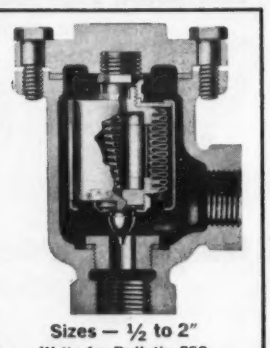
Looking for a machine to apply a tough adhesive to wood, metal, plastic, leather, glass? Let us know what you need. We'll be happy to submit our recommendation. Write for FREE literature.

POTDEVIN MACHINE CO.
273 North Street, Teterboro, New Jersey

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

▲ For more details circle NED-639 M on enclosed inquiry slip ▲

GREATEST CAPACITY PER DOLLAR COST...



Sarco Thermostatic Steam Trap Type No. 9

Sizes — ½ to 2"
Write for Bulletin 250

7 important advantages!

1. **Greatest capacity per dollar cost** — 1" size discharges 9,650 lbs/hr at 10°F below steam temperature, 125 psi.
2. **Same head and seat for 0-300 psi** — no change of heads or seats for varying loads and pressures.*
3. **Fewer parts to stock** — same bellows, head and seat for 0-300 psi.*
4. **Very compact and light** — ¾" size fits in palm of hand. Weighs only 3¾ lbs.
5. **Freeze-proof** — wide open, self-draining when cold.
6. **Only one working part**—the thermostatic element. Inspected or replaced in few minutes without moving trap from line.
7. **Every trap steam-tested** — at rated max. pressure.

**No. 9-300—Cast steel body and cap, with Monel metal bellows*

4179

SARCO — SARCO COMPANY, INC. 635 MADISON AVE., NEW YORK 22, N. Y. PLANT: BETHLEHEM, PA

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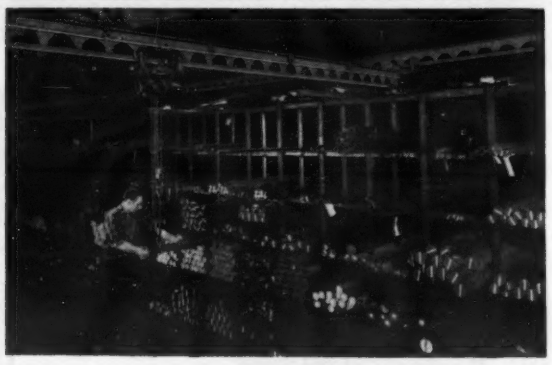

20 FOOT BARS
Stored and Handled Efficiently

Simple, inexpensive overhead tramrail cranes make it easy to handle long, unwieldy bars and store them in racks where readily found. One man can easily and quickly place a heavy bar into or take out of storage and deliver to any point covered by the crane.

GET THIS BOOK! BOOK NO. 2008 Packed with valuable information

Wherever materials are moved Cleveland Tramrail offers possibilities of tremendous savings.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
6621 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

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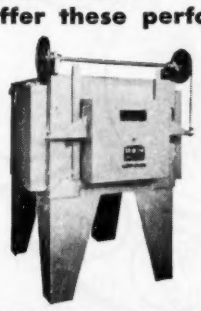
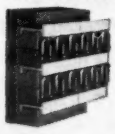
SOLVE HEAT-TREATMENT PROBLEMS
for Glass, Steel, Aluminum, Ceramics, Chemical Processing

ONLY TRENT BOX TYPE FURNACES offer these performance advantages:



- Controlled, Uniform Clean Heat to 2300°F.
- Operate from Standard Voltages
- Standard Switches and Controls
- Require No Transformers
- TRENT "Folded and Formed" Electric Heating Element

THE HEATING ELEMENT MAKES THE DIFFERENCE!



Surface of continuous "Folded and Formed" ribbon type element faces the work chamber—gives up to *4 times the radiating area* per given cross section of ordinary types! Let TRENT engineers study your needs to determine the efficient and economical solution to your heating problems.

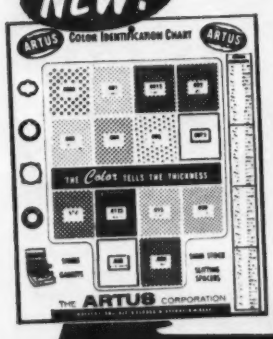
Write for Bulletin 75-TD

TRENT INC.
Electrically Heated Industrial Equipment

251 Leverington Ave., Philadelphia 27, Pa.
In Canada
Pioneer Electric Eastern Ltd., Toronto

▲ For more details circle NED-642 M on enclosed inquiry slip ▲

NEW!



A 'MUST' WHEREVER SHIMS ARE USED

ARTUS

PLASTIC SHIMS

THE COLOR TELLS THE THICKNESS

FREE
Write for this handy COLOR CHART, today!

Artus Plastic Shims are real time savers in production and maintenance. They're used by many of America's best known industrial corporations because they're more efficient, more convenient, always available.

Custom shapes to your specifications.

Write for Samples and Literature or Mail Blueprint for Test Sample.

THE ARTUS CORPORATION
201 South Dean St. • Englewood, New Jersey
LOwell 7-0900
formerly INDUSTRIAL PRODUCTS SUPPLIERS

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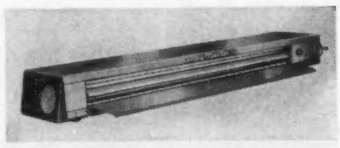
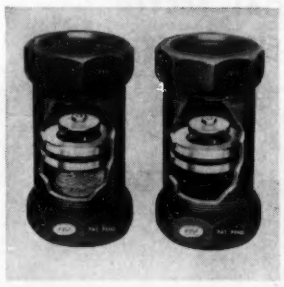
WHITEPRINTER
44-in. wall or table mounted unit



Sharp prints from any translucent material, as well as excellent intermediates and sepias are produced at speeds up to 10 fpm by this wall or table-mounted 44-in. Copymaster whiteprinter. Wide feed table simplifies print feed and return. A horizontally mounted, self-sealing chamber permits processing several prints simultaneously. Light source is three replaceable black light fluorescent lamps. Printing unit is housed in 18-gage steel with baked-on finish, measures 58½ x 9¼ x 6¼ in., and weighs 80 lb. Developing chamber is made of aluminum and weighs 4 lb. Unit operates from standard electrical outlet. • **Copymation, Inc.**, 5650 N. Western Ave., Chicago 45, Ill.

▲ For more details circle NED-644 M on enclosed inquiry slip ▲

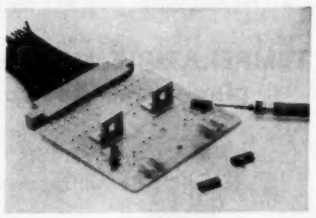
SUCTION LINE CHECK VALVE
available with or without screen



Model 211 suction line check valve consists of a Dresser fitting and a check valve insert, and is available with or without a screen. Installation is by slipping the bottom end of the Dresser fitting over the suction pipe, placing the check valve inside the fitting, sliding the fitting up to meet the nipple, and tightening top and bottom nuts. Valves have composition discs or metal-to-metal seats. • **Universal Valve Co.**, Box 444, Elizabeth, N. J.

▲ For more details circle NED-645 M on enclosed inquiry slip ▲

TEST RECEPTACLE
for standard 0.080-in. test probe



Two or three-leg mounts are available on this test receptacle, used to test printed board circuits with ammeters, voltmeters, ohmmeters, and other test equipment without interrupting operating current. Leg mounts are V-shaped to promote solder wicking. Receptacle will receive a standard 0.080-in. test probe and its legs will fit a 0.052-in. plated, unplated, or eyeleted hole. It is double-ended for either-end probing. Made of brass, it is available with tin, silver, and gold plate. The Zytel nylon 101 housing is rated for 105° C and is molded in 11 colors. •**AMP Inc.**, Eisenhower Boulevard, Harrisburg, Pa.

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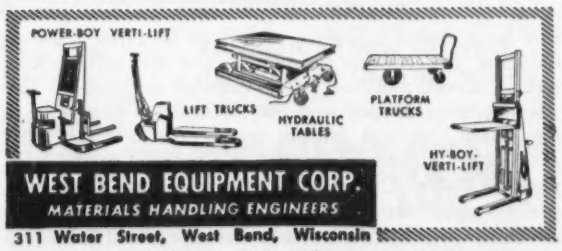
Now . . . SELF-PROPELLED

NEW... Weld-Bilt POWER-BOY VERTI-LIFT

"Weld-Bilt" PRODUCTS

For Power-Driven Handling at TODAY'S LOWEST INVESTMENT

"Double-Powered," with push-button *portability* plus *lifting*, new POWER-BOY brings power-handling equipment within the budget of every plant, every department. Electric motor operated through smooth fluid drive clutch, V-belted to "floating" rubber tired drive wheel, it moves and lifts a capacity load easily, quickly, effortlessly. Features push button forward and reverse, safety braking, 180° steering, separate battery, built-in charger. Available in standard, hinged, telescopic HY-BOY VERTI-LIFTS from 60" to 112". Write for the complete POWER-BOY facts now.



WEST BEND EQUIPMENT CORP.
MATERIALS HANDLING ENGINEERS
311 Water Street, West Bend, Wisconsin

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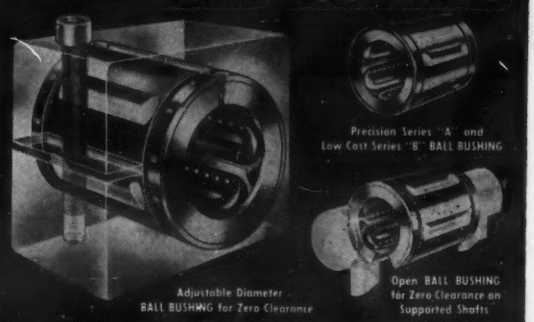
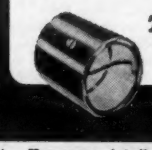
NOW! *Adjustable Diameter and Open*
THOMSON BALL BUSHINGS



The BALL Bearing for *all* your **LINEAR MOTIONS**

LOW FRICTION • ZERO SHAKE OR PLAY
ELIMINATE BINDING AND CHATTER
SOLVE SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

The various types cover a shaft diameter range of ⅛" to 4". Small sizes available in Stainless Steel. Write for literature and name of our representative in your city.



THOMSON INDUSTRIES, Inc.
Dept. C, MANHASSET, NEW YORK

Also manufacturers of NYLINED Bearings . . . Sleeve Bearings of DuPont NYLON

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whatever the threaded joint . . .

NEW PERMACEL® RIBBON DOPE
TRADE-MARK
THREAD SEALANT

The original self-lubricating, compressible, solid sealant, made of TEFLON* for threaded pipe joints.
*Du Pont Trade-mark

PERMACEL *New Brunswick, N.J.*
TAPES • ELECTRICAL INSULATING MATERIALS • ADHESIVES

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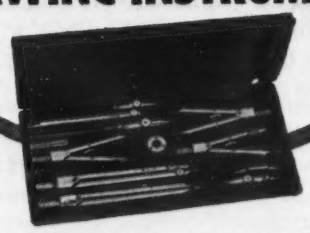
New! Different! Better!
STAINLESS STEEL DRAWING INSTRUMENTS



Now, get the higher precision, lifetime durability and beauty offered only by the drawing instruments made entirely of stainless steel! They will not oxidize, can not be damaged by perspiration. Specially hardened, swivel-type pen nibs are exceptionally durable, easy to clean. Precision-made by Swiss craftsmen of the famous WILD Company, these instruments cost no more than other makes. Sets come in handsome metal cases.

BRUNING America's Leading Supplier of Engineering and Drafting Equipment

MAIL COUPON TODAY! YOU'LL BE GLAD YOU DID!

Charles Bruning Company, Inc. Dept. 12-VA
1800 Central Rd., Mt. Prospect, Ill.
Please send me information on WILD Stainless Steel Drawing Instruments.
Name____ Title____
Company____
Address____
City____ County____ State____

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Start up pneumatically-operated tools and equipment **immediately** with clean dry air after week-end or overnight shut-downs. Low-cost Hi-eF Purifiers with improved separating efficiency enables plants to start up instantaneously without downtime to remove damaging moisture in air and steam lines. Absolutely no maintenance, filters or screens required. BULLETIN 503 tells how to deliver clean, dry air and steam to pneumatic and steam-operated equipment. Yours free. Write.

THE V. D. ANDERSON CO. 1988 W. 96th St., Cleveland 2, Ohio
DIVISION OF INTERNATIONAL BASIC ECONOMY CORPORATION

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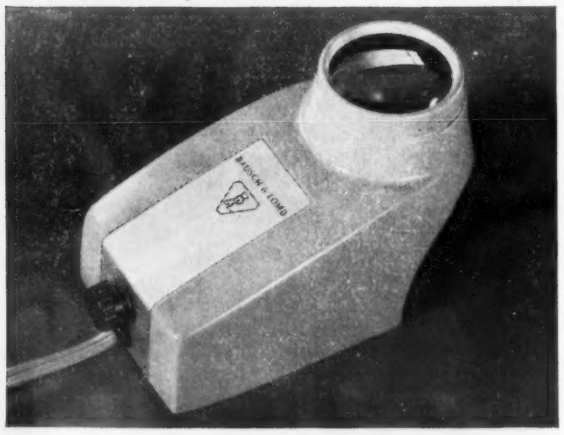
New Bausch & Lomb 3X Illuminated MAGNIFIER!



IDEALLY SUITED FOR QUALITY CONTROL ENGINEERING

The new 3X Illuminated Magnifier gives full three power magnification wherever detailed examination or inspection of small objects is needed. Brilliant illumination directly on the object being viewed and a wide field of view make this magnifier particularly versatile. Available in battery or 115V models, it weighs only 15 ounces. The all-metal housing measures 3¼″ high; 3″ wide; and 5″ long. Either battery or 115V model $14.75.

Over 65 different types of readers and magnifiers are available to answer your every need. All feature lenses of the finest quality optical glass, ground and polished to curve. Be sure and specify Bausch & Lomb.

WRITE FOR *catalog No. 1-103 to Bausch & Lomb Incorporated, Rochester 2, New York*

BAUSCH & LOMB
SINCE B&L 1853

Makers of: Balomatic Projectors • CinemaScope Lenses
Ray-Ban Sun Glasses • Binoculars • Microscopes
Quality Eyewear • Rifle Sights • Scientific Instruments

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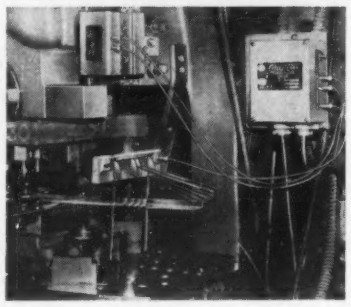
ELECTRIC PUNCH PRESS CONTROL adapts to automated operations



Usable on dog-type and air clutch punch presses, the Cycle-Chek all-electric control adapts to various automated operations and sequences. The three-component control will minimize die breakage and down time. Ejected part causes contact fingers to swing out and engage the contact spring with a wiping action that assures positive electrical contact. Individual fingers can be slipped on or off independently without removing switch from its mounting. Visual indicators inform operator at all times of the operating condition of the press. • **Rehrig Safety Controls,** 3730 E. 26th St., Los Angeles 23, Calif.

▲ For more details circle **NED-653 M** on enclosed inquiry slip ▲

COMPACT ELECTRICAL TESTER checks electric circuits safely

Self-contained and battery powered, this BullDog Chek-Lite can be used as a voltage tester, continuity tester, and flashlight. Weighing about 2 oz and the size of a package of king-size cigarettes, this pocket-size tool is easy and safe to use. Price is $5. • **I-T-E Circuit Breaker Co.,** BullDog Electric Products Div., Box 177, Detroit 32, Mich.

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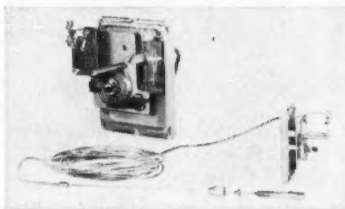
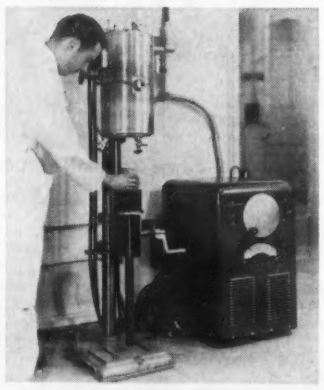
TEMPERATURE MEASURING SYSTEM plug-in unit has ranges to 1200° F



Employing plain or coiled bulb sensing elements, stainless steel capillaries in lengths to 200 ft, and a Bourdon tube element, this mercury-filled temperature sensing system plugs into any of four positions on Bailey receiver-recorder units. Standard ranges of 0-200° F to 0-1200° F are available, and ambient temperature error is limited to ½ per cent per 200° F per 100 ft. System is compatible with other plug-in units used with the receiver-recorder to measure pneumatic and electrical quantities or to control programs. • **Bailey Meter Co.,** 1050 Ivanhoe Rd., Cleveland 10, Ohio.

▲ For more details circle **NED-655 M** on enclosed inquiry slip ▲

HIGH TEMPERATURE FURNACE laboratory type heats to 4800° F



Compact graphite resistance heating element used in this high temperature resistance furnace makes possible an 8-in. high, 4-in. diameter working chamber inside a 20-in. high, 10⅛-in. diameter unit. Continuous operation up to 4800° F, such as required for melting and sintering certain materials, is possible. Intermittent temperatures up to 5100° F can be provided. A flow of helium or other inert or reducing gas protects the charge and the furnace element. Cooling water flows through portions of the aluminum outer shell and the electrodes. Furnace has removable top and bottom covers and a hearth lift mechanism for bottom loading. Standard power supply is a 16-kw 220 or 440-v ac unit with manual output voltage control. • **Curtiss-Wright Corp.,** Santa Barbara Div., Box 689, Santa Barbara, Calif.

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Sutton NEW IMPROVED MOTOR DRIVEN PRESSURE BLOWER

ONE-PIECE HOUSING
SELF-CLEANING WHEEL

For EXHAUSTING Dust . . Smoke Fumes . . Vapor
COOLING
DRYING
CONVEYING Cotton . . Wool Shavings
FORGE BLASTING

3 SIZES ¼, ½, 1 H. P.

STRONG . . LIGHT CAST ALUMINUM

Even, non-pulsating air flow . . 100-800 cu. ft. per min. at ½" to 6" static pressure. Straight wall construction cuts windage . . ups efficiency. 3450 r.p.m. direct connected 60-cycle motor . . open or totally enclosed. Set discharge in 8 different positions.

WRITE FOR DESCRIPTIVE LITERATURE

Sutton *Manufacturing Corp.*
112 W. WILSON AVENUE
NORFOLK, VIRGINIA

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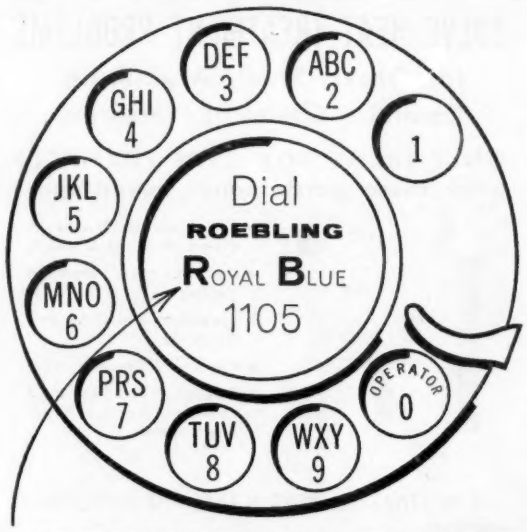


. . . FOR THE TOUGHEST WIRE ROPE AVAILABLE

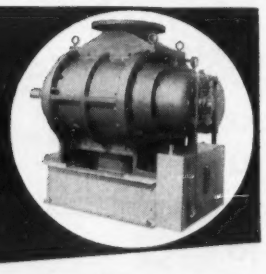
Roebling Royal Blue wire rope—made to last like no other rope you've *ever* used. Made from Type 1105 rope wire, extra-high strength improved plow steel, *Roebling-made steel, made only for wire rope.* Used in construction, logging, mining, quarrying, lumbering, petroleum and all kinds of manufacturing industries—*anywhere* wire rope is used. Royal Blue stays on the job and works hard.

Ask Roebling's Wire Rope Division, Trenton 2, New Jersey for the *saving* details.

ROEBLING
Branch Offices in Principal Cities
John A. Roebling's Sons Division
The Colorado Fuel and Iron Corporation

▲ For more details circle **NED-658 M** on enclosed inquiry slip ▲

SUTORBILT... NEW BLOWERS AND GAS PUMPS, SERIES 3200



Series 3200 Sutorbilt lobe type positive blowers and gas pumps are heavy duty, high performance units which are designed to handle from 800 to 20,000 cfm at pressures from 2 to 10 psi. Available with timing gear diameters from 10″ through 22″ in horizontal designs. Also, many sizes are offered with vertical case arrangements.

3200 SERIES DESIGN FEATURES:

- distortion-free construction at maximum operating pressure
- increased pressure and horsepower ratings with safety
- oversize heavy duty anti-friction roller bearings
- alloy steel helical timing gears insure accurate phasing
- internally ribbed impellers provide high strength and stability
- machined sub-bases furnished with all units
- force feed pressure system lubricates timing gears and bearings
- mechanical seals prevent leakage or gas contamination in gas and vacuum pumps

Write for descriptive literature, Department E

SUTORBILT CORPORATION, 2966 EAST VICTORIA ST. • COMPTON, CALIF.
SUBSIDIARY OF FULLER COMPANY • CATASAUQUA, PA.
IS WELL BUILT
S-29
2620

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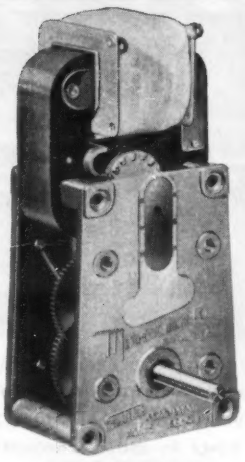
GEARMOTORS
5 Basic Sizes

- Speed up to 200 RPM
- Power up to 40 in. lb.
- Open or enclosed case
- Continuous or intermittent
- Machine cut gears
- Finish ground shafts
- Special features available
- Millions in use
- Prompt delivery
- Samples at once
- Ask for our literature



Motoresearch also designs and produces high frequency motors, generators, rectifier type power supplies and other Special Electrical Equipment. We invite your inquiries.

Millions of Motoresearch Gearmotors now in use!

OPEN TYPE MOTOR

MOTORESEARCH COMPANY
1600 JUNCTION AVENUE
RACINE, WISCONSIN

Designers and Manufacturers of
SPECIAL ELECTRICAL EQUIPMENT

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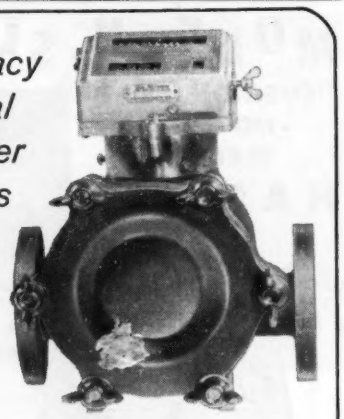
high accuracy on chemical and fertilizer applications



Badger's 2" stainless steel meter with magnetic drive

Accuracy of ±.5% (20-100 GPM) for measuring, blending, batching of liquid corrosive chemicals in manufacturing and bulk plant operation.

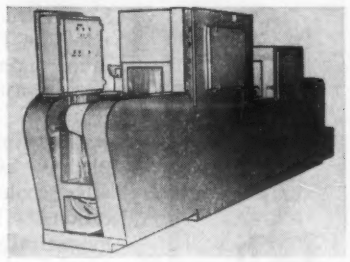
Rugged Type 316 stainless steel construction, simple design, easily removable cover for in-place cleaning. Magnetic drive eliminates packing gland.

Write for descriptive literature

Badger Meter Mfg. Co.
Industrial Products Division
4545 W. Brown Deer Rd. • Milwaukee 23, Wis.

▲ For more details circle NED-661 M on enclosed inquiry slip ▲

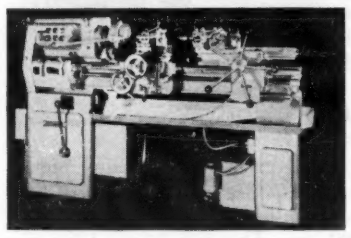
BLAST FINISHING MACHINE
produces variety of finishes



Automatic stainless steel Hydra-Blast finishing machine produces a variety of uniform and consistent precision decorative finishes on many types of products. Hard-to-reach areas on aircraft, camera, electronic, instrument, and missile components may also be cleaned, deburred, or descaled by the Jeturbo system which has no pumps or moving parts. The wet blast unit incorporates pull-push controls, Flash-O-Cycle indicating lights, adjustable blast guns, and self-unloading and Oxi-Gard stations. • **Automation Services, Inc.**, Hydra-Blast Mfg. Div., Box 5554, Fenkell Station, Detroit 38, Mich.

▲ For more details circle NED-663 M on enclosed inquiry slip ▲

TURRET LATHE
has ram turret with six working stations and 32 to 1250-rpm speeds



Swing over bed ways of 15 in. and swing over cross slide of 8 in. allow the Model 3R universal ram type turret lathe to be used as a chucking machine as well as for bar work. Bar capacity is 1½ in. Machine is equipped for turning between centers, single point threading, and standard turret operations. The ram turret has six working stations and electrically engaged power feeds. Turret travel is 10 in. Each turret face is bored to receive 1½-in. standard shank tooling or to permit passing bar stock through the head.

The carriage provides both power longitudinal and power cross feeds through apron clutches. Sixteen spindle speeds from 22 to 1250 rpm are available through the 5-hp, two-speed, geared motor. An optional range is 32 to 1800 rpm. Coolant pump and piping, oil pan, and splash guards are built in. Price is $7167. • **Sheldon Machine Co.**, 4258 N. Knox Ave., Chicago 41, Ill.

▲ For more details circle NED-664 M on enclosed inquiry slip ▲

Magnetic Reed Switches

Hamlin, Inc.—Hamlin magnetic reed switches operate in any position, and are hermetically sealed for reliability in wet, dry, or explosive conditions. They are described in 6-page folder which also provides charts and diagrams on both mechanical and electromagnetic actuation methods. Switches are used in relays, position indicators, counters, limit switches, flow meters, and other instruments.

▲ For more details circle NED-665 M on enclosed inquiry slip ▲

the exclusive
FLEX-A-FOAM
DUST MASK
(no other product like it . . . anywhere)

Here's everything that management and worker alike could possibly want in a dust respirator!

1. **Form-fitting design:** Self-adjusting to any size and shape of face without pressure or irritating discomfort.
2. **Attractive styling:** Smartly designed to suit the most discriminating wearer.
3. **Filtering efficiency:** Filters non-toxic dusts 100 times smaller than the eye can see.
4. **Easy-breathing comfort:** Easier to breathe through and talk through than an ordinary pocket handkerchief.
5. **Feather-like weight:** Weighs only 1 ounce complete.
6. **Simplicity and economy:** Only 4 tough, long-wearing inter-locking parts — all washable. Pure latex filter outwears throw-away type more than 100 to 1.

No wonder FLEX-A-FOAM is the one dust respirator workers welcome and WEAR!

Sample only $1.45 postpaid (Industrial price only)

FLEX-A-FOAM® DUST MASK

FLEXO PRODUCTS, INC. • Westlake, Ohio

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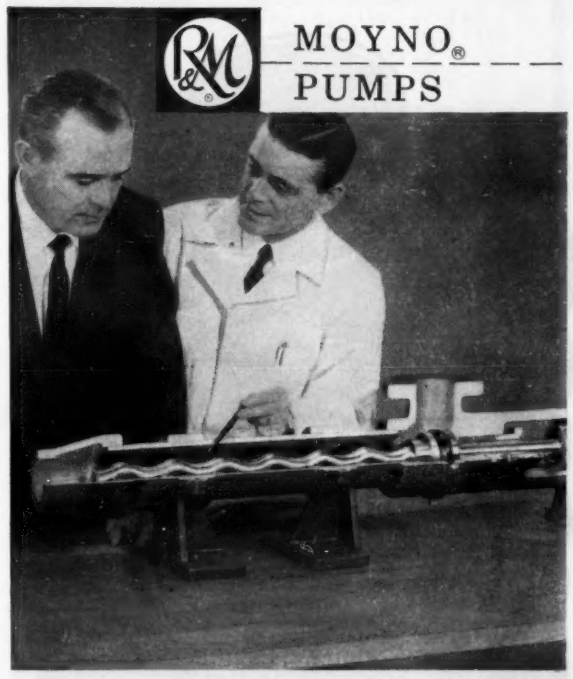
MOYNO® PUMPS



Let MOYNO'S® "Progressing Cavities" Cut Pump Maintenance Costs!

MOYNO's unique *"progressing cavity"* principle cuts pump maintenance costs because material being moved contacts only one moving element. MOYNOS are constructed to stoutly resist corrosion and abrasion. As shown in the cutaway model above, MOYNO's screw-like rotor revolves in a double-threaded stator forming *"progressing cavities"* that move material smoothly along, without foaming, aerating or crushing.

Typical materials pumped include non-pourable pastes, abrasive slurries, chemicals, foods, acids, even suspended solids up to one inch in size. Many materials now successfully pumped by MOYNO were once considered "unpumpable."

Capacities are available up to 500 gpm and pressures up to 1000 psi. Off-the-shelf replacement parts are always immediately available. Write today for Bulletin 30—NE

ROBBINS & MYERS, INC.
motors, household fans, Propellair industrial fans, hoists, Moyno industrial pumps
SPRINGFIELD, OHIO • BRANTFORD, ONTARIO

capacities to 500 gpm; pressures to 1000 psi

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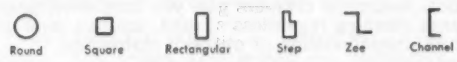
EMI
GET EXACTLY WHAT YOU WANT FROM THE MOST COMPLETE RANGE OF STORAGE AND MATERIAL HANDLING RACKS IN THE INDUSTRY!

Air-Row Head fully adjustable pallet racks.
SNAPS IN, LOCKS IN, NO LOOSE PARTS!

EMI has the most complete range of storage and material handling racks in the industry. Shown here are examples. If you have a special problem, we will design racks to your exact specifications.

METAL WORKING FACILITIES—EMI offers complete metal working facilities including tubular, structural and special shapes.



YOU CAN STACK OR SHIP *ANYTHING* ON EMI RACKS

Write for our complete catalog!

EQUIPMENT MFG. INC.
21550 HOOVER ROAD • DETROIT 5, MICHIGAN

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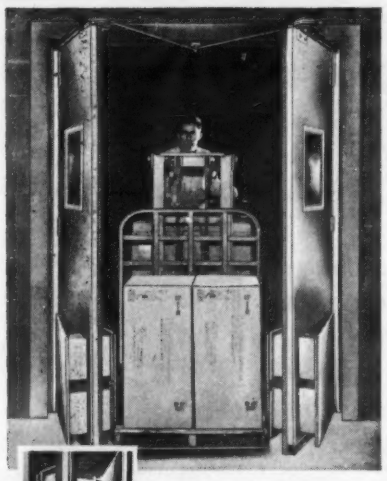
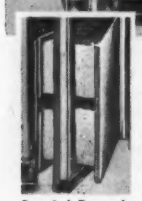


Keeps Traffic *Moving* without wear, tear or repair

CLARK SHOCK ABSORBER DOOR



Special Formula Urethane-Cushioned Bumpers absorb shocks.

Save time and money with this lightweight, rigid Door that takes impact in stride. No strain at the flexible hinges, no warping, nothing to go out of whack. The **Bumper** takes the shock—not the **Door**.

Spring Retriever Motor closes the door tightly. Flexible Neoprene Seals prevent loss of heat or cold—keep air temperatures exactly where you want them.

The low-cost Shock Absorber Door may be your solution to slowdowns and bottlenecks. Complete in one easy-to-install unit. Write for prices, full information. Specify size of opening.

CLARK DOOR COMPANY, INC. *(since 1878)*
511 Hunterdon St., Newark 8, N. J.

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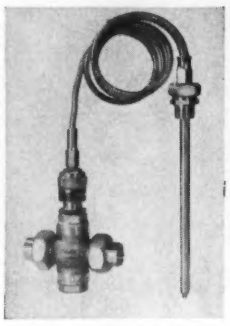
COOLING REGULATOR
reverse acting type is adjustable



Controlled by a thermal actuator, the Type 16 cooling regulator maintains a water bath at a constant temperature by regulated addition of chilled water. Engine jackets, molding platens, air conditioners, and after coolers are other applications. The sensitive, thermostatically-operated, packless control valve has a wide adjustment range in 100° F increments. Regulator is offered in ½-in. single-seated and ¾-in. double-seated types, both with stainless steel trim and 6 ft of armored capillary tubing. • **Lawler Automatic Controls, Inc.**, 453 N. MacQuesten Parkway, Mt. Vernon, N. Y.

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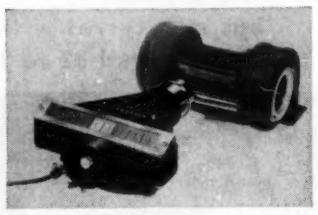
VIBRATION METER
for motors and other equipment



Vibration amplitude is measured by oscillation of a light beam on the graduated ground glass scale of the Model 1 Vibrometer. Improved device for vibration testing of motors and other equipment has its glass scale mounted at a 30-degree angle for convenient reading. High frequency response has been increased. Models are available with full scale readings of 0.032, 0.016, 0.004, and 0.002 in. Hand held models are also available. • **Vibroscope Co.**, Box 97, Glenford, N. Y.

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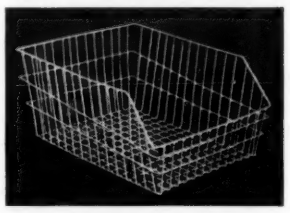
PLASTIC COATED BASKETS
for carrying or storing parts



Resistance to continuous outdoor exposure and imperviousness to oil, grease, and many chemicals is assured in these wire baskets by coating them with Plastisol, a tough, durable plastic. The 2500 Series of multipurpose baskets hold a variety of parts for handling or storage. Ten sizes range from 7 x 14 x 9 in. to 15 x 23 x 9 in. A cut-away front lip allows rapid loading and unloading. The stackable white or crystal green baskets can be used on carts, movable tables, or conveyor belts. Production runs of special baskets can be arranged. • **Abbey Wire Works, Inc.**, Collins & Westmoreland Street, Philadelphia 34, Pa.

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300% FASTER ULTRASONIC CLEANING WITH SELF-TUNING*

Self-tuning Autosonic cleaners by Powertron clean faster, better and cheaper because they: Eliminate operator training and monitoring; Release labor for other work; Reduce rejects; Save on solvents.

HERE'S HOW IT'S DONE

The Autosonic is electronically self-tuned by its exclusive feedback transducer and requires no tuning knobs or meters. A simple switch is the only control.

Only Autosonic cleaners give you consistent peak performance cleaning regardless of load, solution level or temperature, contamination or operator inattention.

Powertron's complete line of Autosonic generators, tanks, cabinet models, degreasers and immersible transducers is immediately available from stock. Ask for free demonstration by Sales Engineer. *Case Histories on File.

Write for Data Sheets and free booklet: HOW TO CLEAN ULTRASONICALLY WITH SELF-TUNING.

POWERTRON ULTRASONICS CORP.
DEPT. NED-12 • PATTERSON PLACE, ROOSEVELT FIELD
GARDEN CITY, LONG ISLAND, NEW YORK • Pioneer 1-3220

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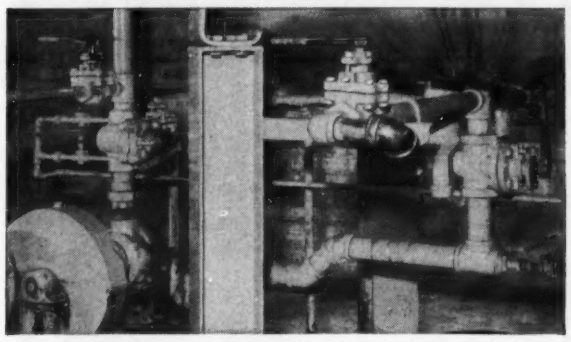
POSITIVE FLUID CONTROL AT LOWER COST PER YEAR

is yours with Homestead® Cam-Seald Quarter-Turn Valves. The Homestead CAM is the key to the simplicity and effectiveness of these valves. The cam limits



full operation to a quarter-turn and automatically provides drop-tight shut-off by pressing tapered plug firmly into the valve body. This cam also holds plug and body in close contact for added protection of sealing surfaces. When you specify Homestead, you get longer valve life and dependable, low-cost-per-year service . . . proved by over sixty-eight years in all types of industry. Write today for complete information.

hv **HOMESTEAD VALVE MANUFACTURING COMPANY**
"Serving since 1892"
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MODERN SLUGGER

"CUSHION SNAP" -NO KICK- ELECTRIC HAMMER

-8½lb. lightweight with a heavyweight wallop!

- Drill holes in granite
- Open steel drums
- Use in body shops
- Remove excess weld
- Use all day without fatigue!
- 40 different tools available

Write, wire or phone
MODERN MFG. CO., INC.
678 Davisville Road, Willow Grove, Pa.
Phone: OLdfield 9-4820

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SAW HOLES *Through Sheet or Plate!*

With a MARVEL No. 1 Hole Saw Kit, you can save time and labor by sawing holes from ¾" to 2½" diameter in sheet or plate, using an ordinary portable electric drill or a drill press. Saws to cut holes from 9/16" up to 6" dia. are available. MARVEL High-Speed-Edge Hole Saws are heavy duty tools, having a cutting edge of high speed steel welded to a tough alloy steel body to insure fast cutting and long service life. Arbors are heat treated, rugged, and practically indestructible. No. 1 Kit is complete with ¾", ⅞", 1⅛", 1⅜", 1½", 1¾", 2", 2¼", 2½" Saws with necessary Arbors. See your MARVEL Distributor, or write for Hole Saw Bulletin HS-475.

ARMSTRONG BLUM MFG. CO.
5700 W. Bloomingdale Avenue • Chicago 39, Illinois

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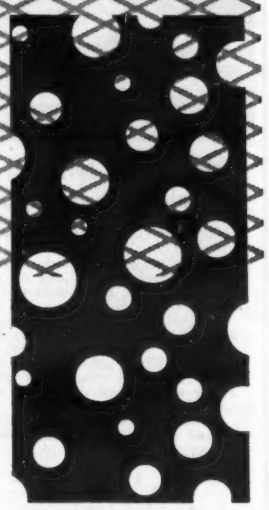
NEW decorative patterns



H&K PERFORATED MATERIALS

Passage or control of air, sound, light or fluid . . . decorative concealment . . . component protection . . . eye catching, sales-building beauty —if your product requires any or all of these features, you'll find the design and functional versatility you need in the Harrington & King line of perforated materials.

Send for General Catalog 75 and/or Stock List Brochure

FIND NEAREST H&K AGENT IN THE 'Yellow Pages'

Listed Under "Perforated Metals"

THE Harrington & King PERFORATING CO. INC.

Chicago Office and Warehouse • New York Office and Warehouse
5658 Fillmore St., Chicago 44 114 Liberty St., Dept. NED, New York

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TOWMOTOR BACKS UP OUTSTANDING PERFORMANCE

WITH TOWMOTOR DEPENDABLE SERVICE

When you purchase Towmotor equipment you can be sure it will never be out of service very long . . . for two very good reasons:

1. Towmotor fork lift trucks are built to last, and built to perform continuously.
2. When needed, you get fast and skillful repair and maintenance service from your local dependable Towmotor representative.

Your Towmotor representative will never let downtime cut into the money you *save* by owning a Towmotor fork lift truck! That's why Towmotor customers keep buying Towmotor equipment. Ask for complete information on Towmotor equipment and Towmotor Preventive Maintenance Service. Write to Towmotor Corporation, Cleveland 10, Ohio.

TOWMOTOR THE ONE-MAN-GANG -GERLINGER

FORK LIFT TRUCKS, CARRIERS AND TRACTORS SINCE 1919

*Gerlinger Carrier Co. is a subsidiary of Towmotor Corporation

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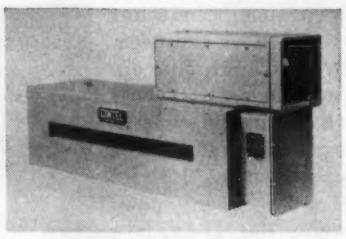
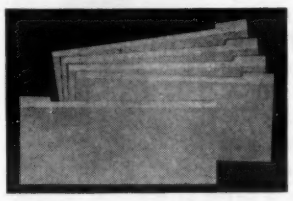
METAL DETECTOR sensitivity is adjustable



Protection against contamination of products and damage to machinery by metal chips and particles in products in process is provided by this metal detector. It has equal sensitivity to all metals, magnetic and nonmagnetic. A sensitivity adjustment is provided on the device, which consists of power unit, search head, and amplifier. Product to be inspected passes through a window of the search head on a conveyor belt or by gravity feed. Various window sizes are available. Equipment is unaffected by vibration, temperature, humidity, and line voltage changes and will actuate various alarm systems, ejectors, and marking devices. • **Instrument Corp. of America**, 516 Glenwood Ave., Baltimore 12, Md.

▲ For more details circle NED-679 M on enclosed inquiry slip ▲

DATA CARD TAB GUIDES reinforced for hard usage



Thinness of the Mylar film reinforcement across the tab and top edge of Aico tab guides for data processing cards permit the guides to be run through tabulating equipment with the cards. The reinforcement enables the tab to withstand hard usage. The smooth plastic surface also prevents soiling from handling. • **G. J. Aigner Co.**, 426 S. Clinton St., Chicago 7, Ill.

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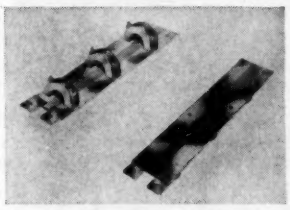
MAGNETIC CONVEYOR SECTIONS allow users to build their own units



Magnetic bed sections are now available for companies who prefer to design and build complete conveyors in their own shops. The full, flat polished face acts as the conveyor bed, eliminates the need for a stainless steel wear plate, and effects savings of about $4 per foot of conveyor length. Magniveyor sections are available in single, double, and triple widths, with connective curved transition pieces for direction change. Units are used to convey cans, metal parts, and fixtures horizontally, vertically, and at all angles. • **Magnetic Engineering & Mfg. Co.**, 840 Van Houton Ave., Clifton, N. J.

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end switch replacement with unconditionally guaranteed

Levolier NO. 41 SWITCHES

The only switch that is unconditionally guaranteed against failure in lighting circuits. One piece phenolic case makes wiring easier, insures better insulation, 6 amp. "T" 125 V.—3 amp. 250 V.

Use 6 to 20 amp LEVOLIER switches for canopy, fixture and FHP motor use. Also toggle, push button and momentary contact type switches.

NO. 71 — Need a *thin* 6 amp. switch? The No. 71 is only 15/32" thick, 6 amp. "T" 125 V. 3 amp. 250 V.

Available from your electrical wholesaler

Send for McGILL Catalog No. 84.

engineered electrical products McGILL® precision needle roller bearings

McGILL MFG. CO. INC., Electrical Div., 151 N. Campbell St., Valparaiso, Ind.

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USE QUICK EXHAUST VALVES TO BOOST AIR CYLINDER OPERATION

Where maximum piston speed is desired, these Quick Exhaust Valves are extremely efficient. Use them on single- or double-acting cylinders for faster operation in both directions. Installed on cylinder ports, they provide immediate passage to the atmosphere for any back pressure tending to hinder piston motion. This "dumping" eliminates the usual slow-up caused by the air travelling back through the operating valve to exhaust. Available in 3/8" and 3/4" N.P. Thd. sizes . . . teflon diaphragm in 3/8" size for use where excessive heat is encountered.

For full information on Schrader Quick Exhaust Valves, as well as on hundreds of other air products that will help you get the most out of your air power, write for free informational literature.

Schrader® A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Inc.
459 Vanderbilt Avenue, Brooklyn 38, N. Y.

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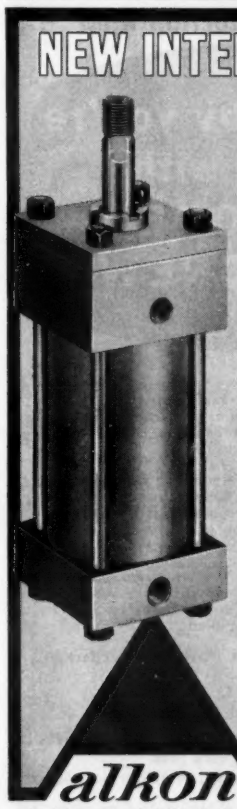
NEW INTERCHANGEABLE CYLINDER



For 250 psi air to 2,500 psi oil applications, Alkon's new Series B cylinder has

PREMIUM FEATURES

Including case-hardened, high tensile piston rod, chrome-plated steel barrel, quick-change piloted packing cartridge, nylon piston bearing, floating cushion — designed to increase cycle life, raise efficiency, reduce maintenance — all at an

ECONOMY PRICE Save on initial purchases; save throughout the long, trouble-free life of the cylinder.

Most models available from stock
Bore sizes from 1½" through 6".

Write today for new 24-page catalog on cylinders, valves, drill units!

ALKON PRODUCTS CORPORATION
200 Central Ave., Hawthorne, N. J.
HAwthorne 7-6633

alkon

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STOP

PORTABLE! MIDWEIGHT! QUALITY ENGINEERED! Exclusive 3-way, pivotal-rigid combination handle. Either-hand, momentary safety switch. 13" KL-13 $169.50 for areas up to 5,000 sq. ft.

Generals ARE FEATURE-FILLED

GO

MAIL COUPON FOR COMPLETE DETAILS

PUT $100 BACK IN YOUR POCKET!

WHY SPEND $300 FOR A LARGE FLOOR MACHINE? THE NEW

General

15" KL-15 at $199.50 DOES THE WORK PERFECTLY for areas up to 7,500 sq. ft.

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3630 Rombouts Ave., Bronx 66, N. Y. Est. 1930
• All Sizes For All Types of Floors — Made By Floor Specialists
• World's Most Complete Line of Floor Maintenance Machines & Vacuums

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☐ Have Distributor call on us.
☐ Send complete information, literature and prices.
☐ Floor Machine ☐ Vacuum
Company
Street
City State
My Name Title

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PAINT STRIPPING CLINIC!

Send Us Your Tough Stripping Problems for Fast Action!

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Better find out for yourself . . . about Epoxystrip, Econostrip and other Beck Paint Remover lines and formulations. Use the BECK CLINIC SERVICE — send us several parts, sections, or test panels (properly tagged) of the work to be stripped.

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Beck Strippers outstrip all others — removing organic finishes, epoxies, etc., as easily as baked enamels, lacquers, etc. No stripping scum — clean rinsing!

BECK EQUIPMENT COMPANY
3350 WEST 137th STREET — CLEVELAND 11, OHIO

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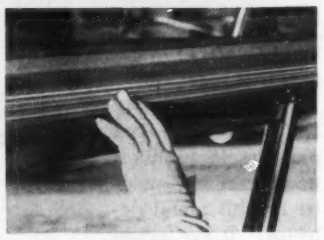
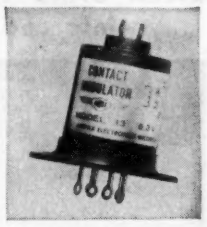
STRIP SWITCH
continuous type is easily mounted



Two flat conductors separated at the edges by insulators and encased in a Geon vinyl sheath comprise the tape type Controflex strip switch. Light pressure at any point along the flexible sheath brings the two conductors together, thus closing the circuit. It can be used around corners and cut to any length with shears. Switch is easily mounted with adhesive, staples, or a special molding. Uses include doorsill light switching, office signaling, hatch closure indicators, machinery safety switches, conveyor controls, bus passenger signaling (shown), and burglar alarms. • **Tapeswitch Corp. of America,** 229-24 Linden Blvd., Cambria Heights 11, N. Y.

▲ For more details circle NED-689 M on enclosed inquiry slip ▲

ELECTROMECHANICAL CHOPPER
designed with low noise level



Static and magnetic shields, confined magnetic fields, and very small air gaps combine to hold the noise level to 0.6 mv rms in the Model 33 electromechanical chopper. Chopper is housed in a round metal can with pierced pin terminals. Drive coil leads exit through the top. The ¾-in. diameter, 22½-gram unit has a drive of 6.3 v at 60 cps, average dwell of 175 degrees, and single-pole double-throw contact action. • **Airpax Electronics Inc.,** Cambridge Div., Jacktown Road, Cambridge, Md.

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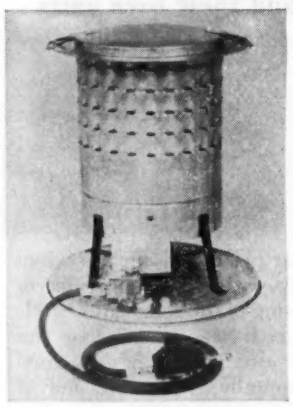
LP-GAS HEATER
safety and manual control models



Gases are heated by a center flame spreader cone and circulated through louvered openings in the corrosion resistant shell of the Penguin LP-gas heater. Suited for use in exposed or drafty areas, it has an output of over 85,000 Btu per hour of radiant heat, close to the ground. Safety control model with safety pilot light, shutoff valve, LP-gas regulator, and 7 ft of hose, and a manual control model with regulator and hose, are available. Prices are $36.50 and $26.50, respectively. Both have a light gray finish. • **C. R. Daniels, Inc.,** Daniels, Md.

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DRAKE "Tinylite"
Lampholders and Indicator Light Assemblies are the ideal units for space saving . . .

The advent of the much smaller "Tinylite" style lamps opens up many new possibilities for miniaturizing all kinds of devices —dial lighting, instrument indicators, scale lighting on transistor radios, toys and novelties are a few examples.

DRAKE now offers a series of "Tinylite" Midget Screw Lampholders only 1/5 as large as standard units (with lamp installed); and "Tinylite" Type No. 121 Midget Indicator Light Assemblies, the smallest available Indicator Lights with replaceable lamp and completely insulated from housing, supplied either with plastic dome lens or flat cap, lettered or numbered, and complete with lamp.

Investigate the many possibilities with these skilfully engineered subminiature units, which can save you both space and money.

★ SEND FOR DATA SHEETS, QUICK REFERENCE CATALOG OF THE BIG DRAKE LINE

DRAKE MANUFACTURING COMPANY
4624 N. OLCOTT AVENUE • CHICAGO 31, ILLINOIS

MINIATURE LIGHTING SPECIALISTS

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Compare what the PDQ WILL DO...
Compare the PDQ PRICE...
With any other air valve...

The PDQ has faster response time, greater capacity than valves twice its size and 4 times its weight. To repack . . . replace 2 self-contained units in less than a minute! Change valves on the line in 30 seconds! The PDQ has a short stroke, rugged aluminum construction with built-in wear compensation. Write us today.

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- ✓ Accessibility
- ✓ Simplicity
- ✓ Speed and Capacity
- ✓ Price and Quality

The Hunt PDQ Valve tops them all in every class.

HUNT *Quick-As-Wink* AIR & HYDRAULIC CONTROL VALVES

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design, purchasing, production men . . .

here's why you're right with MOORE SET SCREWS

Design — there's a Moore Set Screw exactly right to meet your specs. On new developments or on hard-to-solve problems we have experienced men to supply the answers.

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Production — our inspection guarantees conformity and uniformity. Your assembly lines run smoothly and quality control is simplified.

Moore Set Screws simplify design, purchasing, production. Send for detailed price catalog.

MOORE SET SCREWS **George W. Moore, Inc.** *since 1880* 94 Beaver St., Waltham 54, Mass.

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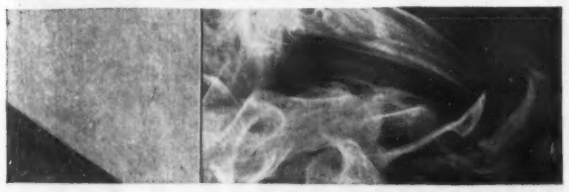
MOSINEE MAKES MAGIC WITH PAPER



Papers that resist air passage . . . MOSINEE Hydensels

- Have resistance to passage of air (densometer) up to 100 M seconds per 100 C.C.
- Free from shives and other imperfections.
- Can be manufactured with resistance to grease and oil penetration.
- Excellent papers for coating—resist coating penetration.
- Ideal for release coatings—silicones, wax barriers, protective drip sheets, rosin packaging.
- Wide range of basis weights (20 to 70 lb.).
- Quality uniform from roll to roll . . . carload to carload.

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MOSINEE PAPER MILLS COMPANY Mosinee, Wisconsin *Write dept. NED-12.*

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MOSINEE MAKES MAGIC WITH PAPER

Char Test favors MOSINEE Flame-Resistant Papers

- Mosinee flame-resistant papers consistently test less than the minimum requirements of 4½" char when subjected to U.S. government specification test methods.
- Special flame-resistant process, developed by Mosinee laboratories, can be applied to many of our papers.
- Ideal for paint arrestors, furnace filters, insulation, drop cloths, covers for stored goods, and packing and wrapping papers.
- Quality is always the same—from roll to roll . . . from carload to carload.

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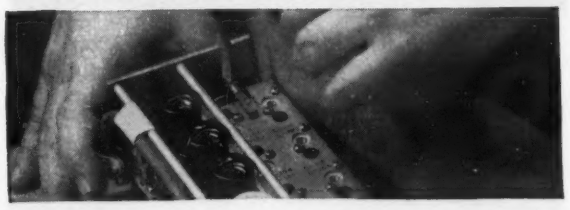
MOSINEE MAKES MAGIC WITH PAPER



MOSINEE Seven-O-neutral papers for metal wrapping

- Chemically inert, noncorroding on contact—flat or creped.
- For interleaving metals and wrapping aircraft, automotive, electronic, missile components, etc.
- Effective as an intimate wrap for steel, copper, nickel, tungsten, aluminum, silver, brass, manganese, zinc, cadmium and other metals.
- Ideal for packaging products for long-term storage and overseas shipments.
- Meets requirements under Military Specification MIL-P-17667A.
- Uniform quality—from roll to roll . . . from carload to carload.

FREE **DATA FILE plus a "PAPER TERMS" DICTIONARY**

MOSINEE PAPER MILLS COMPANY Mosinee, Wisconsin *Write dept. NED-12.*

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CHROMALOX SNAP-ON DRUM HEATERS

Just snap on and plug in . . . for fast, uniform heating. 5-gallon size temperature ratings from 140° to 230°F . . . 300 to 1,000 watts. 55-gallon size temperature ratings from 140° to 190°F . . . 750 to 1,500 watts.

Resistance wires are double covered with braided Fiberglass and woven into a flexible mesh. Available with silicone rubber coating or impregnated with Teflon for added protection against abrasion and chemical attack.

Write for prices. Tell us which size and what is to be heated. Edwin L. Wiegand Company, 7509 Thomas Boulevard, Pittsburgh 8, Pennsylvania. 91848

CHROMALOX Electric Heat
INDUSTRIAL • COMMERCIAL • RESIDENTIAL

▲ For more details circle NED-696 M on enclosed inquiry slip ▲

for quick economical fastening

use TOWNSEND TUBULAR RIVETS AND MACHINES

The combination of Townsend tubular rivets and setting machines gives you a fast, economical assembly method for a variety of metals, plastics and fabrics.

The Townsend Tubular Rivet Setting machines are versatile and can be tooled for almost any size and shape of work. They are available in floor and table models.

Townsend tubular rivets are available in steel, brass, copper, aluminum and other special materials. Quick delivery is assured.

For information write to **Townsend Company, Engineered Fasteners Division, P.O. Box 71-G, Ellwood City, Pennsylvania.**

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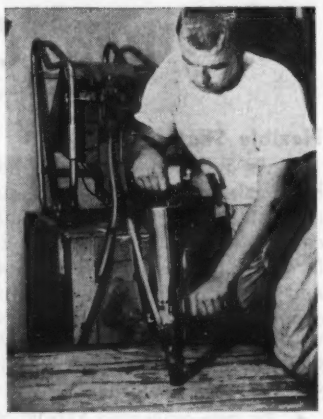
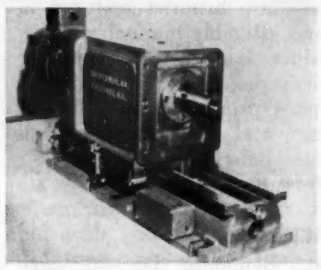
AUTOMATIC NAILING GUN
fed from older model hoppers



Portable Powasert automatic single-blow nailing gun drives up to 120 nails per minute in sizes up to 2½ in. long (8-penny) with head diameters up to ⅜ in. It is used with older automatic power feeder-separator models. Common or machine-grade nails are dumped into the hopper which automatically aligns and feeds them, point first and one at a time, through a flexible hose to the gun. They cannot be driven unless the gun is pressed against a solid surface. Power is adjustable for flush or countersunk driving without marring the work surface. Gun operates on 95-psi air, covers a 12-ft radius from the wheel-mounted hopper, and drives nails in any position at any angle. • **United Shoe Machinery Corp.**, Powasert Dept., 140 Federal St., Boston 7, Mass.

▲ For more details circle NED-699 M on enclosed inquiry slip ▲

AIR-FED DRILL UNIT
has maximum stroke of 10 in.



Air for feed and rapid traverse is combined with mechanical restrictive forces to provide the electrically driven Pneumech drill unit with constant and smooth feed. Gear changes permit feed variations from 0.0016 to 0.015 in. and speeds from 287 to 4600 rpm. Maximum stroke is 10 in. The way type unit is readily adapted to single or multiple spindle heads for reaming, counterboring, and allied operations with a maximum capacity of 2 hp. Spindle and driver are mounted in Timken antifriction bearings. Measuring 37¾ x 10 x 16½ in., the unit can be used with dial type or trunnion machines, or as a "building block" for special machines. Spindle with standard Morse tapers will accept drills, adjustable adapters, and other accessories. • **Hoefer Mfg. Co.**, Freeport, Ill.

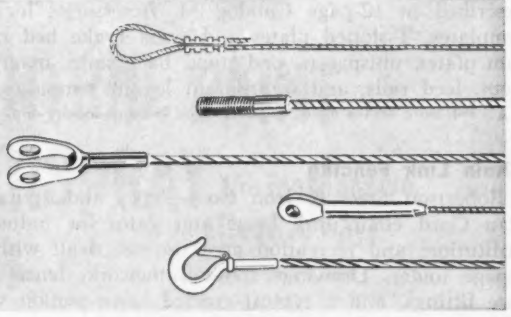
▲ For more details circle NED-700 M on enclosed inquiry slip ▲

Press Overload Detector

Wintriss, Inc.—Press overload detector featured in 4-page Catalog CM400-79 is designed for presses operating at up to 1000 strokes per minute. It instantly detects minute changes in normal die shut height due to malfunctions and immediately disengages the clutch control.

▲ For more details circle NED-701 M on enclosed inquiry slip ▲

Are The Cable And Assemblies You Use Designed Specifically For Your Needs?



Or are you "getting by" with possibly less efficient, costlier-in-the-long-run substitutes? There's no need to settle for stock items if custom-designed Bergen cable and assemblies could do your job better, safer, for less.

Bergen has the experience, the equipment and the personnel to produce *the* cable and assembly your project requires . . . and deliver it quickly. Don't waste another day or dollar . . . bring your cable and assembly problems to Bergen today.

FREE! Send for Assembly Catalog CA-2

BERGEN WIRE ROPE CO.
502 GREGG ST • LODI, N.J.
Specializing in the Unusual

▲ For more details circle NED-698 M on enclosed inquiry slip ▲

HIGH SPEED • POWERFUL GRIP

New, improved model speeds up all repeat operations—*milling, drilling, tapping, punching, bending, riveting.* Both hands left free to produce more! Light squeeze to 2250 pounds pressure! Extra thick jaws for attaching jigs. Jaws open to 3-inches; 1/16" to 5/8" maximum travel. Complete with foot control, air hose and fittings..... **$44.00**

SPEEDY AIR REGULATOR Regulates pressures 0 to 140 lbs. No. 622 $7.25

SPEEDY AIR FILTER Assures clean, oil-free air. No. 140 $4.00

SPEEDY UNIT Production spray unit with Ext. Mix Gun. No. 705 $26.50

Order from Your Supplier or Write for Air Tool Catalog
W. R. BROWN CORP., 2647 N. Normandy Ave., Chicago 35
AIR TOOLS • AIR VISES • AIR REGULATORS • FILTERS • COMPRESSORS

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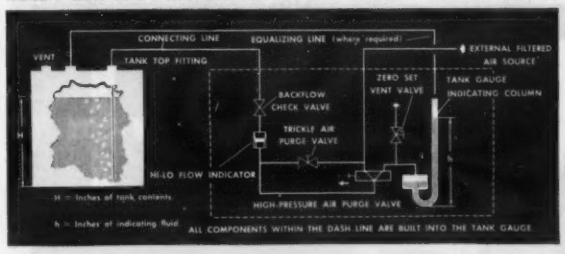
integral blow-down TANK GAUGE with continuous purging systems

HERE'S HOW THE MERIAM HYDROSTATIC GAUGING SYSTEM WORKS



Now . . . you can specify a continuous purge tank gauge and blow-down device *with all the working parts in one package!* Just pull a knob to remove condensate, scale and sludge from your tank gauging lines connected to either vented or pressurized closed tanks. Installation is simple. Meriam's new tank gauge requires only two connections to your present system. In hazardous areas, the instrument can be located as far as 800 feet from the tank. Gauges are available in single or dual blow-down units and in compact multiple-tube groups with up to six gauging tubes in one assembly.

THE MERIAM INSTRUMENT CO.
10950 Madison Avenue
Cleveland 2, Ohio

Send for Bulletin L-10 Today 10046-M1

▲ For more details circle NED-703 M on enclosed inquiry slip ▲

Surety saves you money

FOUR-2-ONE

VINYL IMPREGNATED WORK GLOVES

PROVIDING *Longer Wear at Lowest Cost*

As the name indicates, count on these Surety gloves outwearing cotton and many leather types **four or more to one** in most work. Users report great resistance to snagging and abrasion plus easy finger flexing and hand comfort. You can wash them, too; come up sparkling bright and lint free. Available in men's and women's sizes, two styles illustrated. Want samples? Check your Surety distributor or write today.

SLIP ON STYLE

KNIT WRIST STYLE

THE SURETY RUBBER CO. Dept. N
CARROLLTON, OHIO

In Canada: Safety Supply Co., Toronto

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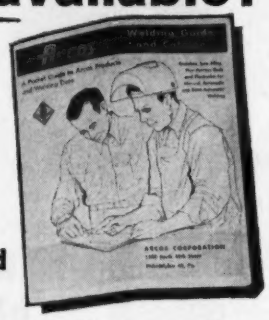
now available!



new pocket guide and catalog for better welding results

Nothing like it! Pocket size. Complete data on selection of rods and electrodes for welding stainless, low alloy, non-ferrous and light metals. Gives facts on applications, currents, preheating, annealing, AWS/ASTM classifications. Special sections on How to Get Better Stainless Welds, and Effect of Alloying Elements on Weld Metal. Comprehensive list of valuable technical data available. FOR FREE COPY write ARCOS CORPORATION, 1500 South 50th Street, Philadelphia 43, Pa.

ARCOS | Filler Metal Specialists

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FREE

The ABC's of pallet handling digested into a new and useful "how to" handbook. Contains practical information: how to select, load and handle pallets; how to estimate pallet requirements; step-by-step load pattern diagrams; how to increase warehouse capacity up to 50%; facts about the RAYMOND trucks that made narrow aisles possible. Send for your copy today.

Career Opportunities for Product Design Engineers—Write RAYMOND Today!

The RAYMOND CORPORATION
4113 Madison St., Greene, N.Y.
Send _____ copies of "ABC's of Pallet Handling."

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COMPANY
STREET
CITY STATE

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New Literature and Catalogs

Flexible Shafts

Revised fourth edition of the "Flexible Shaft Handbook" simplifies selection of standard, pre-engineered, or custom-designed flexible shafts. New information covers simplified engaging system based on integral formed square drives, and improved remote control and power drive flexible shafts. Standard shafts are complete, ready-to-attach units available from stock. Write on letterhead to S. S. White Dental Mfg. Co., S. S. White Industrial Division, Dept. P, 10 E. 40th St., New York 16, N. Y.

▲ For more details circle NED-707 M on enclosed inquiry slip ▲

Static & Dynamic Seals

Goshen Rubber Co.—Tetraseals are designed for direct O-ring substitution in 3/16 to 15-in. ID sizes. They use the same groove as an O-ring, hold close tolerances on cross section, and are made without joints or laminations. Used in most static and some dynamic applications, seals are subject of descriptive 12-page reference manual.

▲ For more details circle NED-708 M on enclosed inquiry slip ▲

Wire Construction Design

E. H. Titchener & Co.—Case histories featured in 24-page wire component and assembly manual tell how costs were cut and product sales appeal improved through use of wire and strip metal components. The revised manual also describes principal types of wire, popular finishes, wire sizes, and the variety of end forming and threading treatments available.

▲ For more details circle NED-709 M on enclosed inquiry slip ▲

Industrial Incandescent Lighting

Thomas Industries Inc., Benjamin Div.—32-page Bulletin G diagrams and describes incandescent lighting for general and specific industrial needs. Reflector holders, lampholders, lamp extensions, and reducers are shown. This incandescent line features seamless construction, corrosion resisting porcelain enamel surfaces, and closed beaded edges.

▲ For more details circle NED-710 M on enclosed inquiry slip ▲

Pipe Fitter Manual

Chemetron Corp., Tube Turns Div.—Information of value to the modern pipe fitter and pipe welder is concentrated in pocket-size 72-page "Pipe Fitters Manual." It covers characteristics of welded and threaded piping, basic mathematical formulas and conversion factors, dimensions of welding fittings and flanges, commercial pipe sizes, electrode data, and practical tips on welding.

▲ For more details circle NED-711 M on enclosed inquiry slip ▲

Punch Mounting Accessories

Punch Products Corp. — Setup of Unipunch hole punches and notchers in stamping presses and press brakes is facilitated by line of mounting accessories described in 12-page Catalog M. Accessories include templates, T-slotted plates and press brake bed rails, ram plates, unispacers, end stops, back stops, magnetic stops, feed rails, and transparent layout templates.

▲ For more details circle NED-712 M on enclosed inquiry slip ▲

Chain Link Fencing

Robertson Steel & Iron Co.—Types and styles of Stan Gard chain link fence and gates for industry, institution, and recreation area use are dealt with in 4-page folder. Drawings show framework, fence and gate fittings, and a typical erected fence section with all components for a finished installation.

▲ For more details circle NED-713 M on enclosed inquiry slip ▲

Ferrous Forgings

American Brake Shoe Co., AmForge Div.—28-page booklet describes this division's facilities for producing drop, upset, and press forgings. Advanced heating and automation techniques combined with new piercing, drilling, and split-die methods to lower customer's final part cost are covered.

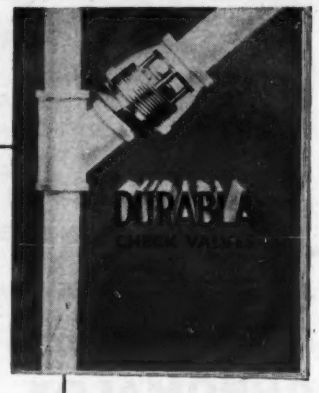
▲ For more details circle NED-714 M on enclosed inquiry slip ▲

Metal for Spring Applications

H. K. Porter Co., Riverside-Alloy Metal Div.—Kit of information on metal for spring applications contains, in addition to data sheets, an 8-page bulletin explaining the basic advantages of several different spring materials. Kit is of standard file folder size.

▲ For more details circle NED-715 M on enclosed inquiry slip ▲

FACTUAL NEW BOOK



on a unique (use it anywhere) check valve

Combined with practically any standard pipe fitting, the DURABLA *Basic-Check* Unit becomes a complete check valve—for almost any service. *It operates perfectly in any position... handles any liquid, gas or air.*

For the full story on these versatile valves, send for a free copy of this *new* booklet. Includes typical applications, construction details, table of sizes and weights, etc. Ask for Form 300 NED120.

DURABLA MANUFACTURING COMPANY
114 Liberty Street, New York 6, N. Y.

DURABLA®

Patent No. 2,649,277 DM-28

▲ For more details circle NED-716 M on enclosed inquiry slip ▲

New ... ROLL-AROUND ULTRASONIC CLEANERS

These roll-around ultrasonic cleaning units, of 2-13 gallon capacities, consist of generator, transducer and counter top and are easily moved on large casters. Tanks, with bottom transducer coverage from 27-50%, are positioned off-center to provide a work area for baskets.

To operate, simply plug into a 115 volt line. No connection to drain or plumbing is required since the cleaners are drained by means of a flexible hose. Optional features include 2-5 micron filter and heating elements which maintain temperatures from ambient to 160°F.

Units can be used with solvents, detergents, mild acids and alkaline cleaners.

Roll-around ultrasonic cleaners are among the many units featured in National Ultrasonic Corporation's new 32-page Ultrasonic Cleaning Equipment Catalog 60. Write on your company letterhead for a free copy.

NATIONAL ULTRASONIC CORP.
111 Montgomery Ave., Irvington 11, N. J.
ESsex 1-0550 • TWX NK 1030

▲ For more details circle NED-717 M on enclosed inquiry slip ▲

"ZERO TO FULL SPEED IN NOTHING FLAT!"

with ZERO-MAX

STEPLESS VARIABLE SPEED DRIVE

ZERO-MAX new "400 Series" gives you stepless variable speed from zero to 1200 rpm instantly and accurately with just a finger's touch on the control lever. These compact, quality drives produce constant torque-ratings of 3 to 450 inch-pounds with fractional horsepower 1800 rpm motors. Over 250 models are available with or without safety disconnect, gearhead, reverse, or motors. Quality at LOW COST makes ZERO-MAX ideal for original equipment. *Write for free 16 page catalog.*

AS LOW AS $45.00

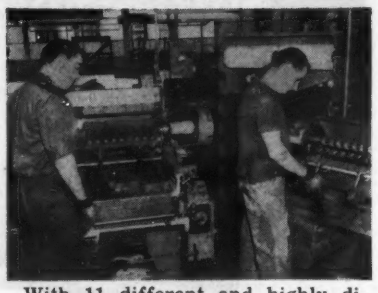
THE ZERO-MAX COMPANY

ZERO-MAX

2855 Harriet Ave. So., Minneapolis 8, Minn.

▲ For more details circle NED-718 M on enclosed inquiry slip ▲

REED & BARTON
purchased their first
CLAIR
Spoon and Fork Unit in 1951
Their 16th CLAIR machine was installed in 1960!



The name "Reed & Barton" remains synonymous for "Quality Silverware" since 1823. With pardonable pride, CLAIR Surface Finishing Machines boast of their part in the renowned "Reed & Barton" craftsmanship.

With 11 different and highly diversified models to choose from, why not confront Clair Mfg., Co., Inc. with your problems?

You may be surprised to learn that Clair machines are quietly performing to the advantage of your competition on identical applications.

CLAIR MANUFACTURING CO., Inc., OLEAN, N.Y.

Offering the Most VERSATILE Line of Surface Finishing Machines

▲ For more details circle NED-719 M on enclosed inquiry slip ▲

MARTIN-DECKER REMOTE INDICATING
"SENSATER" Crane Scale

Accurate, convenient "eye-level" reading regardless of load or hook height. Available for a fixed installation or hand truck mounted for portability. The reliable, time-proven "Sensater" load element, connected to a full-scale, remote dial by up to 50 ft. of flexible double-wire braid hose, brings overhead weighing indication where you want it. Capacities 1,000 lbs. to 50,000 lbs.

MARTIN-DECKER "SENSATER" CRANE SCALE

Compact, low headroom loss, Crane Scale. High safety factor, low cost, light weight, accurate. Ideally suited for overhead weighing where operator has easy access to the indicator. Weigh during the normal handling operation, not as a separate, time-consuming function. The money saved is yours. Capacities 1,000 lbs. to 50,000 lbs.

Low Cost ■ Easy to Read ■ Compact ■ Easy to Handle
High Safety Factor (5 to 1) ■ Lightweight ■ Accurate

MARTIN DECKER
WRITE FOR DESCRIPTIVE BULLETIN S-34
MARTIN-DECKER CORPORATION
3431 CHERRY AVENUE, LONG BEACH 7, CALIFORNIA

Precision Pressure Instruments—Testing—Weighing—Load and Force Measurement.

▲ For more details circle NED-720 M on enclosed inquiry slip ▲

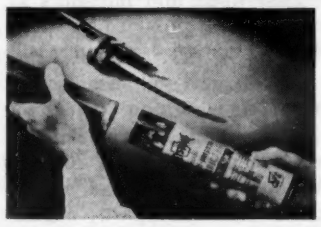
New Processes and Materials

EPOXY BONDING KIT
three types repair almost anything

This easy-to-carry All Purpose Bonding Kit contains three types of epoxy cements which can be used to repair or bond almost any material. Formulated for specific applications, the three epoxies can be used to repair brick, stone, masonry, steel, cast iron, and other materials and products. Applications range from filling cracked floors to bonding metals and repairing broken pipes. ● **Hiller Aircraft Corp.**, Adhesive Engineering Div., 1411 Industrial Rd., San Carlos, Calif.

▲ For more details circle NED-722 M on enclosed inquiry slip ▲

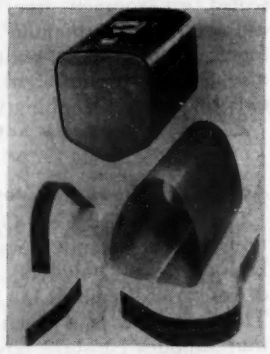
MULTIPURPOSE LUBRICANT
packaged in cartridge for gun use



Keystone No. 88 X Light lubricant is suited for plain and anti-friction bearings and for use on rotating or sliding surfaces. Packaged in 14-oz cartridges for use in any lever type gun, it is water repellent, unaffected by heat or cold, and resistant to mild acids and alkalis. Cartridge is quickly installed, minimizes maintenance time, and assures clean application. ● **Keystone Lubricating Co.**, 3100 N. 21st St., Philadelphia 32, Pa.

▲ For more details circle NED-723 M on enclosed inquiry slip ▲

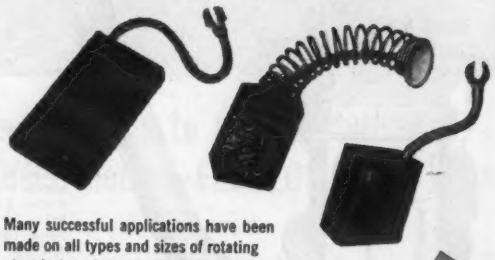
CONTOURED GLASS FIBER PANELS
custom-made to 3-in. minimum radius



Intricately contoured parts can be permanently formed from molded glass fiber panels for use in such items as machine housings, containers, tanks, and components. Compound curvatures are possible on panels of almost any thickness at radiuses as small as 3 in. Service is offered on a custom basis. ● **Molded Fiber Glass Sheet Co.**, 4601 Benefit Ave., Ashtabula, Ohio.

▲ For more details circle NED-724 M on enclosed inquiry slip ▲

ANY TYPE OR SIZE
USG® BRUSH FOR
FRACTIONAL HP OR
INDUSTRIAL MOTORS



Many successful applications have been made on all types and sizes of rotating electrical equipment with USG motor and generator brushes and contacts manufactured by The United States Graphite Company. USG brushes are available in OEM production quantities or for replacement purposes in the following grades: carbon, carbon-graphite, electro-graphitic, graphite and metal-graphite. Special grades can be developed to meet your specific needs.

Write today for Engineering Handbook B-56 and the Brush Grade Supplement.

THE UNITED STATES GRAPHITE COMPANY
DIVISION OF THE WICKES CORPORATION • SAGINAW 10, MICHIGAN
B-282-1

▲ For more details circle NED-725 M on enclosed inquiry slip ▲

CUT your material handling costs with
American
adjustable
STORAGE RACKS
no other rack can match these features

1-American Stringers are one-piece, made of durable, continuous welded steel tubing made from high carbon steel . . . 2-American Posts are rugged—made from extra heavy gage steel, roll-formed by special tooling . . . 3-American has the highest safety factor of any leading rack manufacturer—this means greater protection to truck operators and merchandise . . . 4-American Racks are easy to erect—no costly bolting—all parts hook into place . . . 5-American Racks are easy to adjust—all stringers move independently of any other part—they raise and lower like a window, on 4" centers . . . 6-American Upright Frames are cross-braced against sway—turnbuckles provide ready take-up for uneven floors.

American Slide-n-Lock selective type racks
for all types of merchandise—whether light packages or heavy metal products.

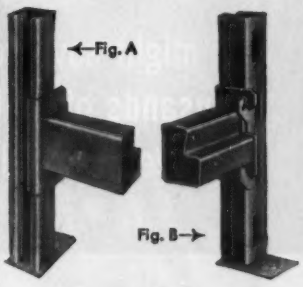
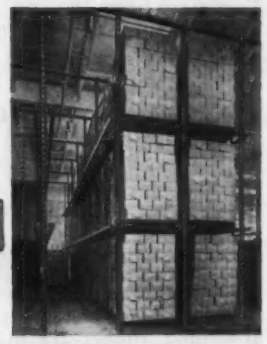
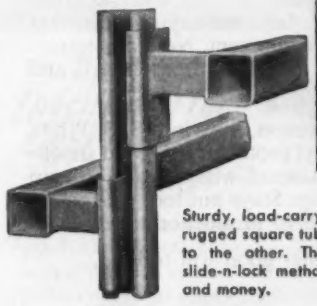


Fig. A—smooth line construction of aisle side of post and stringer eliminates hazardous protrusions. Fig. B—note rigid connection when stringer is "locked" to post.

American Open-End drive-in type racks
make aisle space storage space . . . ideal for bulk storage



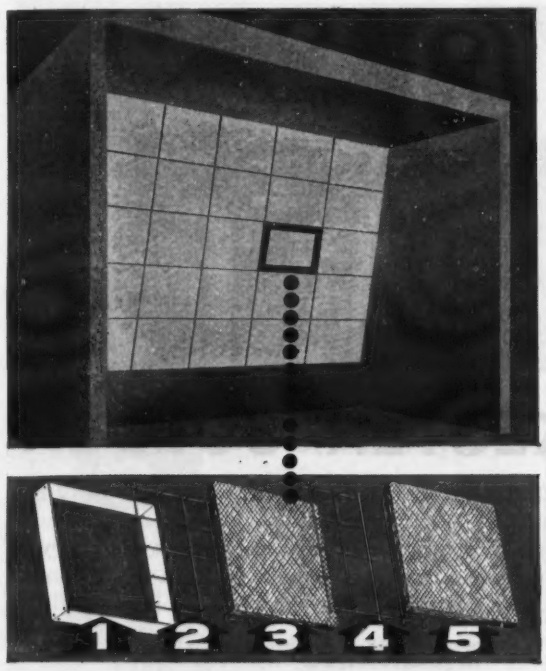


Sturdy, load-carrying stringers are made of rugged square tubing from one end of a row to the other. The American trigger-quick, slide-n-lock method of assembly saves time and money.

send for catalog
AMERICAN METAL PRODUCTS CO.
STORAGE RACK DIVISION
5977 Linsdale Ave. amp® Detroit 4, Michigan

Manufactured in Canada by Sunshine-Waterloo Co., Ltd., Waterloo, Ontario

▲ For more details circle NED-726 M on enclosed inquiry slip ▲



A Paint Arrestor module consists of a Holding Frame (1), two Snap-in Grids (2 and 4), two Paint Arrestors (3 and 5). Loaded Paint Arrestors are simply replaced as necessary. And, they're also ideal for air-borne ink, mist, dye, frit, etc.

CONTROL PAINT OVERSPRAY the inexpensive, effective way!

The advantages of R P Paint Arrestors, the inexpensive, disposable air filters are many. Overspray solids are trapped before they reach the exhaust stack... to reduce fire hazards, damage to adjacent property... disagreeable and time-consuming maintenance work. Installation? —easy and fast. Maintenance? —remove loaded Paint Arrestor and replace a new one. Adaptability? —ideal for any type, any size booth, new or existing.

RP® PAINT ARRESTORS

UL Listed

RP Products of Research
RESEARCH PRODUCTS Corporation
Dept. 32-L, MADISON 1, WISCONSIN

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WHATEVER YOUR BENDING PROBLEM

Whether it's production bending or piece bending of pipe, tubing, bus bar, reinforcing bar or structural metal, there's a PEDRICK machine to do the job—fine, fast and economically.

PEDRICK TOOL AND MACHINE CO.
3640 N. Lawrence St., Phila. 40, Pa., Dept. 6.

BEND WITH PEDRICK

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For mere pennies you insure yourself *and your customer* against damage to your products during shipping, storage, processing. The economic facts are that simple.

S. S. White rigid acetate **Quality Line,** plastic protectors absorb blows like a Champion Heavy-Weight. Impervious to acids, alkalies, greases and oils, they seal in fluids, seal out dirt, dust, and anything else that might damage expensive equipment. Note this too . . . they remove *by hand* in a matter of seconds . . . and leave no shreds behind.

For even lower cost protection, look into S. S. White **Economy Line** elastic vinyl protectors. A good shock-absorbing, rubber-like material with a non-slip grip that makes removal a snap. Stays put too. Customers like this; saves them hours of production time.

Start buttoning up customer good will today . . .

WRITE FOR FREE BULLETIN
5708 and Samples

S. S. White PLASTICS DIVISION

Dept. 7P, 10 East 40th Street, New York 16, N. Y.

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New Literature & Catalogs

Radiation Instruments

Radiation Instrument Development Laboratory, Inc.—88-page Catalog 61 on radiation detecting and measuring instruments is available. It generally describes and specifies multichannel analyzers, spectrometers, scalers, ratemeters, plus generators, coincidence/anticoincidence analyzers, analog-to-digital converters, detectors, and similar lab and industrial instruments.

▲ For more details circle NED-730 M on enclosed inquiry slip ▲

Semiconductors

Hoffman Electronics Corp., Semiconductor Div.—Electrical and physical values and characteristics are tabulated in 20-page 1960 catalog on silicon solar devices, silicon transistors, silicon diodes, silicon controlled rectifiers, zener regulators, and zener reference devices. Also listed are all semiconductor field sales offices and industrial distributors.

▲ For more details circle NED-731 M on enclosed inquiry slip ▲

Fasteners for Metals & Plastics

My-T-Grip Mfg. Co.—Various types of staked fasteners, including flush, shoulder, and self-installing types are covered in 16-page booklet. Fasteners provide load bearing threads in sheet metals as thin as 0.031 in. and in plastics, glass fiber, and phenolics as thin as 0.062 in. A complete section is provided on studs.

▲ For more details circle NED-732 M on enclosed inquiry slip ▲

Industrial Batch Cleaners

Magnus Chemical Co.—"Cleaning . . . in Batches . . . in Minutes" is title of 12-page Bulletin 707-AL which discusses industrial batch cleaning of motor parts, precision gears, business machine parts, engine blocks, and other items. Booklet stresses importance of single-lever operation of the cleaning machine, minimum supervision during cleaning cycles, and complete automation of some systems.

▲ For more details circle NED-733 M on enclosed inquiry slip ▲

Subminiature Switches

W. L. Maxson Corp., Unimax Switch Div.—Expanded line of Unimax subminiature switches described in 16-page Catalog 20-1 includes high-temperature, sealed, environment-free, and MIL-specification types as well as the popular phenolic-cased, pushbutton, toggle, and integral-actuator switches. Information also covers five different terminal styles and several switch/actuator combinations.

▲ For more details circle NED-734 M on enclosed inquiry slip ▲

Adjustable Speed Drives

General Electric Co.—Operating principles, configurations, features, and mounting positions of the 1/4 to 25-hp line of Polydyne mechanical adjustable speed drives are discussed in 16-page Bulletin GEA-6806. The Polydyne is a mechanical adjustable-speed drive that supplies constant torque, responds quickly to output speed adjustments, and requires minimum maintenance.

▲ For more details circle NED-735 M on enclosed inquiry slip ▲

Manufacturers' Exchange Service

Manufacturers Exchange Corp.—A listing service for disposing of inventory not in current use by subscribing members is subject of 8-page brochure. Service is two-way in that it not only provides a means of selling unused products, but of locating items which might be urgently needed by another manufacturer.

▲ For more details circle NED-736 M on enclosed inquiry slip ▲

Flexible Tubular Conveyor

Hapman Corp., Conveyor Div.—Six different industrial applications of the Hapman flexible tubular conveyor are shown in 4-page folder. A conveyor capacity chart to determine conveyor system requirements is also furnished. These conveyors move almost any flowable material, wet or dry, through any plane or angle.

▲ For more details circle NED-737 M on enclosed inquiry slip ▲

Engineering & Producing Custom Glass

Kopp Glass, Inc.—Company's engineering and manufacturing services, ranging from application analysis to custom production of engineered glass products, is traced step-by-step in 20-page Bulletin 760. It shows products used in street traffic control; aviation, railroad and marine signaling; street and interior lighting; surgical lighting; as well as industrial globe, indicator lenses, and color filters.

▲ For more details circle NED-738 M on enclosed inquiry slip ▲

the right ROOF VENTILATOR for every industrial application . . .

. . . is shown in this free bulletin. If you aren't familiar with Hartzell roof ventilators, you don't know what efficient, economical ventilation really is. Write for Bulletin A-112 or call your nearby Hartzell field office.

HARTZELL PROPELLER FAN CO.
Div. of Castle Hills Corp.
62 Thomas Blvd., Piqua, Ohio A member of AMCA

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KESTER SOLDER's highest standards of manufacture and use of virgin metals exclusively are behind its almost single-minded acceptance by industry. Such acceptance has been 60 years in the making . . . and we don't take its responsibility lightly.

WRITE *today for Kester manual "SOLDER . . . Its Fundamentals and Usage." Free.*

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Anaheim, California, Brantford, Ontario, Canada

OVER 61 YEARS' EXPERIENCE IN SOLDER AND FLUX MANUFACTURING

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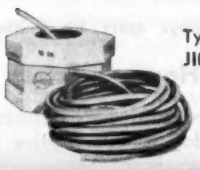
All the installation speed of Flexible Conduit, ...All the protection of Rigid Conduit...with

LIQUATITE®

Extruded Polyvinyl Jacket Molded to Galvanized Flexible Conduit

Complete protection against any and all contamination—impervious to water, oils, chemicals, corrosive atmospheres. Installed in minutes. No more "down-time" due to wiring shorts or burn-outs, no more periodic wiring replacements.

Write for free sample, costs and name of Distributor nearest you.



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ELECTRI-FLEX COMPANY

P. O. BOX 128-H • ROSELLE, ILLINOIS

For more details circle NED-742 M on enclosed inquiry slip

STOP SLIPPING ON FLOORS, RAMPS, STEPS, CATWALKS...trowel on Flintdek*!

- Available in tile red, green, blue, cement gray and high visibility yellow for all walking areas.
- Resists water, gasoline, oil, alcohol, fats, dilute acids and alkalies.
- Doesn't chip, crack or peel over metal, wood or concrete. Covers 50 sq. ft. per gallon.

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*Reg. U.S. Pat. Off.

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Manufacturer of America's Broadest Line of Building Products

For more details circle NED-743 M on enclosed inquiry slip

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for a **Complete** Line of H. P. Rated FLOAT SWITCHES

- ✓ Heavy Duty
- ✓ Standard Duty
- ✓ General Duty
- ✓ Sumptrol

Write for Bulletin 550, Square D Company, 4041 N. Richards Street, Milwaukee 12, Wis.

Ask Your Electrical Distributor for Square D Products

SQUARE D COMPANY

wherever electricity is distributed and controlled

For more details circle NED-744 M on enclosed inquiry slip

New Processes & Materials

TILE-LIKE FINISH is nonvolatile epoxy coating

Drying to a tile-like surface, Tile-It wall finish can be brush or spray applied over painted or unpainted surfaces such as concrete, plaster, cement block, wallboard, glazed block, wood, metal, or marble. Six colors are available. Recommended application requires a two-coat operation. Over porous or rough surfaces, a base coat of Tile-It Pre-Surfacer is used, and on smooth surfaces, a coat of Sealer Concentrate is followed by Tile-It. Finish is resistant to 20 per cent lye, jet fuel, carbon tetrachloride, and many other acids, alkalis, and solvents. • **McDougall-Butler Co.**, Dept. T, 2929 Main St., Buffalo 14, N. Y.

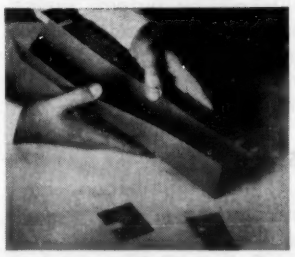
For more details circle NED-745 M on enclosed inquiry slip

CLEANING COMPOUND removes oily soils and greases

Ability to penetrate and remove both oil-wettable and water-wettable soils is inherent in Kelite No. 25E chemical cleaning composition. The noncaustic alkaline, dustless powdered product is capable of removing difficult oily and fatty soils and greases from hard surfaces. It is safe to use and nontoxic under normal conditions. Composition cleans without attacking such sensitive substrates as organic finishes, aluminum alloys, brass, and other copper alloys. It can be used in water solutions as a solvent, in steam cleaning, and for hot tank immersion soaking. • **Kelite Corp.**, 81 Industrial Rd., Berkeley Heights, N. J.

For more details circle NED-746 M on enclosed inquiry slip

VULCANIZED FIBER electrical grade is flame resistant



Combination flame, heat, and dielectric barrier in electronic and electrical equipment is provided by Pyronil E vulcanized fiber. It is rated nonburning under ASTM procedures D-635 and D-568. A 1/32-in. thickness has a dielectric strength of 215 v per mil and an arc resistance of 50 sec. Gray in color, it is available in rolls, coils, or sheets in thicknesses of 0.010 to 1/16 in. Quantity price of a 48 x 80-in. sheet is $3.30. • **National Vulcanized Fibre Co.**, 1060 Beech St., Wilmington 99, Del.

For more details circle NED-747 M on enclosed inquiry slip

feature for feature...

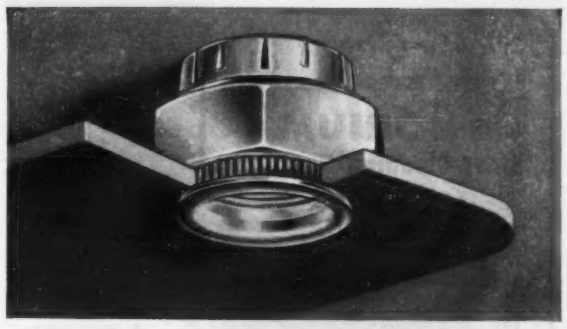
THIS NEW SQUARE D VOLTAGE TESTER *Tops them ALL!*

for further details, write Square D Company, 1601 Mercer Road, Lexington, Kentucky

SQUARE D COMPANY

wherever electricity is distributed and controlled

For more details circle NED-748 M on enclosed inquiry slip



Easiest way to put tapped holes in sheet metal—FLEXLOC clinch nuts

- Serve as locknuts or stopnuts—hold screw tight wherever wrenching stops.
- Save time in blind mounting—hollow shank serves as guide for screw.
- Easily installed. No riveting, no welding, no auxiliary locking elements to worry about.
- Reusable repeatedly without loss of locking power.

Get FLEXLOC self-locking clinch nuts from your SPS distributor. Sizes #0 to ¼ inch—for materials from ½ to 3/16 inch thick. Or write us for literature and samples.

INDUSTRIAL FASTENER Division **SPS**

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For more details circle NED-749 M on enclosed inquiry slip

The **S-22 MICROFINISH COMPARATOR**

GAGE SURFACE FINISH TO NEW A.S.A. STANDARDS - *Quickly - Accurately*

This convenient pocket comparator has 22 precision surfaces for specifying and controlling finish to the new A.S.A. Standard B46.1-1955. Electroformed in durable corrosion-resistant nickel, the S-22 Comparator provides every department with the most inexpensive method for uniform, accurate control of finish characteristics.

Save valuable time in engineering, inspection, quality control—eliminate costly overfinishing in purchasing and production. $17.50 complete with leather case.

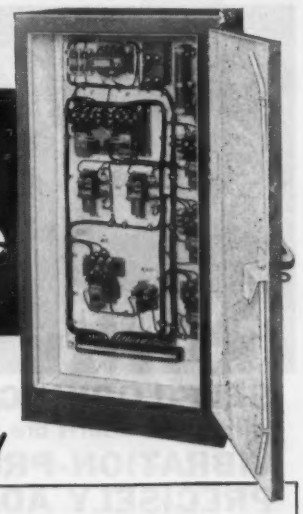
Available from leading industrial distributors, or write

FDL FAIRFIELD DEVELOPMENT LAB., INC.
(SUCCESSOR TO BAPTIST MACHINE CO.)
40 Ludlow Street, Stamford, Conn.

For more details circle NED-750 M on enclosed inquiry slip

new

EC&M "VL" crane control



Designed Specifically for Light Industrial AC Cranes

- Smoother, more efficient performance than manual control • Controllers front-connected and wired for easy inspection and maintenance • No separate protective panels needed • Controllers are compact and have vertical-action contactors

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wherever electricity is distributed and controlled 2727

For more details circle NED-751 M on enclosed inquiry slip

Tighter Patterns
Faster Cleaning
with **BORIUM**
Blast Cleaning Nozzles!

GUARANTEED 300 HOURS WITH SILICA SAND... High efficiency with *all* abrasives.

Here's industry's answer to *lower* blast cleaning costs and *faster* production. BORIUM Nozzles lick the high cost of frequent nozzle replacements, declining efficiency, poor cleaning and waste of compressed air. Secret is in BORIUM Nozzle's tungsten carbide liner. Its tremendous hardness and wear resistance maintain original orifice size and velocity, almost eliminate cut-outs... keep the pattern *tightly concentrated* on target! *Sizes and designs for every requirement, standard or special.*

Ask for BORIUM Nozzle literature!

STOODY COMPANY
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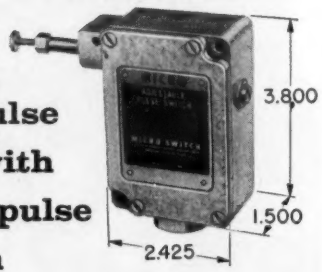
Whittier, California

For more details circle NED-752 M on enclosed inquiry slip

MICRO SWITCH Precision Switches

NEW
Single-Pulse Switch with adjustable pulse length

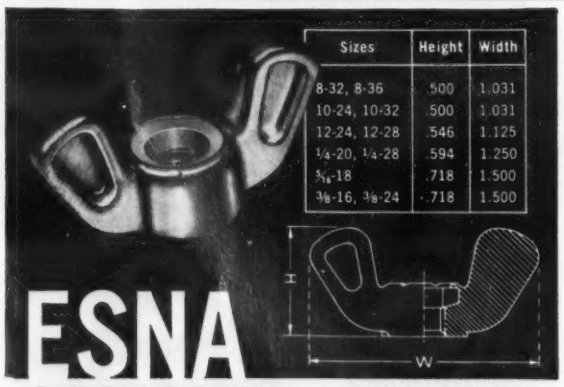


Perfect new control for applications in which momentary opening and/or closing of a circuit is necessary, such as on pneumatic valves where permanent-duty solenoids are not used. Entire pulse operation—actuation and release—is accomplished by depressing the operating plunger. Pulse length adjusts by simply turning screw on side of switch housing. Easy to wire; sealed against oil, dust and water. Single-pole double-throw contact arrangement, 10 amps.—125, 250 or 480 vac. Write for Data Sheet 173.

MICRO SWITCH . . . FREEPORT, ILLINOIS
A division of Honeywell
In Canada: Honeywell Controls Limited, Toronto 17, Ontario

Honeywell
MICRO SWITCH Precision Switches

For more details circle NED-753 M on enclosed inquiry slip



Sizes	Height	Width
8-32, 8-36	.500	1.031
10-24, 10-32	.500	1.031
12-24, 12-28	.546	1.125
1/4-20, 1/4-28	.594	1.250
5/16-18	.718	1.500
3/8-16, 3/8-24	.718	1.500

ESNA
SELF-LOCKING WING NUTS
with nylon inserts are
VIBRATION-PROOF... PRECISELY ADJUSTABLE

The famous ESNA red nylon locking insert gives smooth, consistent locking torque in any position on bolt or stud. Cannot be loosened by vibration, yet is easily adjustable by finger pressure. Gives same dependable locking torque through repeated on-off usage. For full information write Dept. S51-1237 Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, New Jersey.

ELASTIC STOP NUT CORPORATION OF AMERICA

For more details circle NED-754 M on enclosed inquiry slip

New Literature & Catalogs

Caster Comparison Chart

Colson Corp.—"Colson's Comparative Model Number and Dimensional Chart" provides buyers the means of accurately comparing Colson casters with five other makes. Comparisons cover plate size, wheel type, capacity, over-all height, mounting hole space, diameter, bearings, finish, and other construction features.

For more details circle NED-755 M on enclosed inquiry slip

Protective Hand Creams & Cleaners

Med-Fac Laboratories — Skincote protective hand creams which protect the skin from water-soluble and non-water-soluble irritants are described and priced in 4-page folder. Included is a hand cleaner fortified with lanolin and mineral oils to keep skin soft and avoid the drying effect of washing in gasoline or turpentine.

For more details circle NED-756 M on enclosed inquiry slip

Flexible Mold Compound

Smooth-On Mfg. Co.—Answers to basic questions about cold-setting flexible mold compounds and information on how to use them are furnished in 4-page technical Bulletin No. 2. It outlines, step-by-step, the procedure for using Smooth-On FMC polysulphide rubber for mold making where ease of separation is desirable.

For more details circle NED-757 M on enclosed inquiry slip

Gratings, Flooring & Treads

Borden Metal Products Co.—Emphasis to the three basic grating types used in construction is given in 16-page catalog on gratings, flooring, and treads. Dimensional drawings of more than 30 grating subtypes and eight safeload tables for steel grating, aluminum grating, roadway grating, and sidewalk slabs are included. Instructions for selecting and ordering are given.

For more details circle NED-758 M on enclosed inquiry slip

Chipless Machining

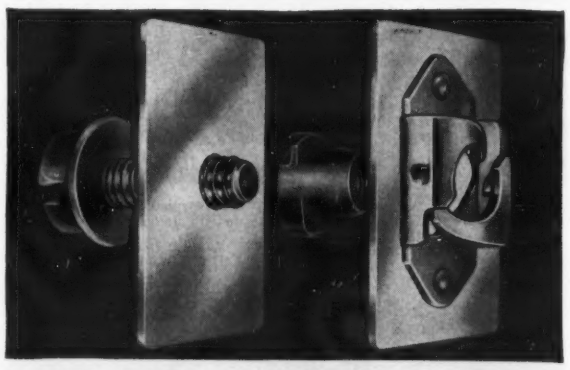
Michigan Tool Co.—The Roto-Flo process of "chipless machining" for cold-forming splines, serrations, grooves, threads, and similar forms is subject of 8-page Bulletin RF-60. Ways of increasing output, saving material, obtaining finer surface finish and stronger parts, and increasing tool life with this process are illustrated.

For more details circle NED-759 M on enclosed inquiry slip

Color-Coated Stainless Steel

Washington Steel Corp.—General information, characteristics, physical and mechanical properties, and applications for color-coated stainless steel sheet and strip are furnished in 8-page Bulletin B-59-3. Color-Rold is produced by applying uniform thermosetting color finishes to MicroRold stainless sheet. Eleven standard colors include three metallics and eight non-metallics.

For more details circle NED-760 M on enclosed inquiry slip



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Just a quarter turn locks and unlocks ESNA's unusually versatile self-locking panel fastener.

The simple two piece design comprises a retainer basket and special self-locking nut which is installed on any standard 1/4" bolt (*you* supply) to provide a practical stud that can be locked-unlocked countless times. Use of the stop nut permits infinite grip adjustments on the bolt, eliminating multiple length studs; original setting can be easily re-adjusted to compensate for panel loosening due to wear. Perfect for applications where quick access is necessary for normal operating or maintenance requirements.

For details write Dept. S49-1237 Elastic Stop Nut Corporation, 2330 Vauxhall Road, Union, New Jersey.

ELASTIC STOP NUT CORPORATION OF AMERICA

For more details circle NED-761 M on enclosed inquiry slip

THREE FEET OR A MILE LONG

The Ver-T-Bench

ASSEMBLIES MOVE SMOOTHLY WITH VER-T-BENCH UNITS

A truly DeLuxe assembly unit.

Many Advantages of Ver-T-Bench Units

More working area and assembly space
More storage space for finished work

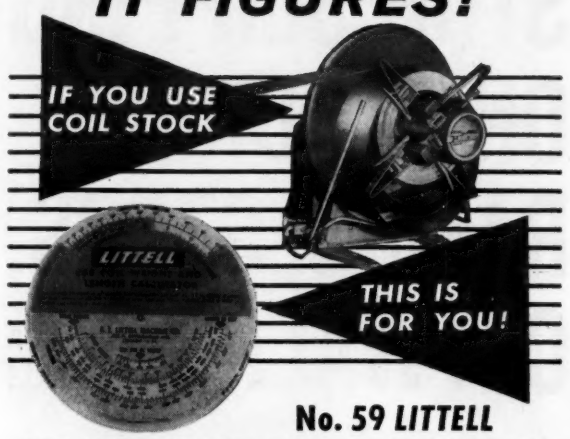
Saves Man Hours · Saves Floor Space

No more clogged aisles No more littered tables
Write today for Descriptive Literature

THE Vince BASNIK COMPANY
MATERIAL HANDLING DIVISION
• 2020 CENTER STREET • CLEVELAND 13, OHIO

For more details circle NED-762 M on enclosed inquiry slip

IT FIGURES!



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COIL WEIGHT AND LENGTH CALCULATOR

It's FREE. It figures accurately. Just set it for the I.D., O.D., Width and Thickness of your coil and it instantly tells you the coil's weight and length. Designed for steel coils. Usable for other metals. Write for your calculator *now*.

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Ask for a catalog, too!

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For more details circle NED-763 M on enclosed inquiry slip

ROLLPIN® SHOP KIT **$12.00**

The Rollpins in this handy compartmented kit serve the function of taper pins, straight pins, set screws, rivets, dowels, cotter pins, etc. They're slotted, chamfered, tubular spring pins that exert constant pressure against the walls of the holes into which they're driven. They won't loosen even under severe vibration. Over 700 Rollpins; diameters from 1/16" to 1/2"—lengths from 3/16" to 3 1/4".

We guarantee you'll find Rollpins the easiest, quickest solution to hundreds of fastening problems in machine, repair and prototype assembly shops.

Send for Rollpin Kit #300 today. Mail check or purchase order for $12.00 (we pay postage). No C.O.D.'s please. Write: Dept. R57-1237

ROLLPIN TRADEMARK
ELASTIC STOP NUT CORPORATION OF AMERICA
2330 Vauxhall Rd., Union, New Jersey

For more details circle NED-764 M on enclosed inquiry slip

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MagnaLift LIFT MAGNET with self-contained power supply

4000 LBS. CAPACITY

for scores of lifting jobs... for conveyors and other automatic handling equipment

Use it in the plant or outside. Removable power pack for complete remote control in mobile equipment—such as cranes, industrial trucks. Many other features you get only in MagnaLift—the *new*, the *different* lift magnet.

GET FULL DETAILS NOW. Write Dept. N-1260 Model LM4, $385.00 F.O.B. Big Rapids, Mich.

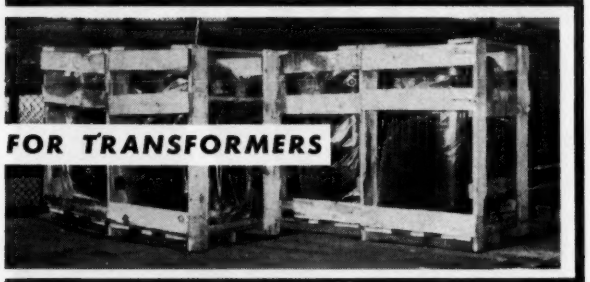
3 Power Packs (interchangeable)
12-VOLT BATTERY
12-VOLT BATTERY—VARIABLE HOLDING POWER
110-VOLT A.C.—BUILT-IN D.C. RECTIFIER

Hanchett MAGNA-LOCK, CORP. BIG RAPIDS, MICHIGAN

For more details circle NED-765 M on enclosed inquiry slip

Low Cost PROTECTION

C line Polyethylene Tarpaulins



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FOR PALLETS

FOR MACHINERY

... and hundreds of other applications

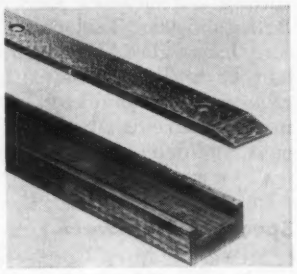
Whatever your protection problem—for finished product or raw material—a C-Line see-through polyethylene tarpaulin provides the low-cost waterproof, dust-proof answer. C-Line poly tarps are light-weight yet tear-resistant, are grease-proof, shrink-proof, resistant to chemicals, temperature or humidity. Black poly also available for situations requiring protection against ultra-violet rays. Write for samples or request quotation on your protection problem. No obligation.

CANTON CONTAINERS INCORPORATED CANTON 7, OHIO

For more details circle NED-766 M on enclosed inquiry slip

New Processes & Materials

WOOD WEAR STRIP
self-lubricating type is machinable



Designed for use on conveying machinery, either as a replacement or OEM product, the Pobco self-lubricating wood wear strip minimizes friction and makes possible optimum operating speeds. It is available in many lengths and thicknesses. Strip may be bored, counterbored, slotted, grooved, tapped, or rabbited to conform with mounting specifications. • **Paramount Oilless Bearing Co.**, 99 Hope Ave., Worcester, Mass.

For more details circle NED-767 M on enclosed inquiry slip

NICKEL PLATING PROCESS
batch treatment seldom required

Simplicity of operation, consistent uniformity of coat, ease of control, and economical use of continuous filtration with activated carbon are advantages afforded by the N2E nickel plating process. Absence of harmful breakdown products in the process obviates batch purification which would result in loss of solution, waste man hours, and consume additional chemical to rebuild the bath. Process involves the simultaneous addition to the electroplating bath of Brighteners E and 2N which are effective in low-intermediate and intermediate-high current density ranges, respectively. It can be used in any plating sequence now using other semibright nickel processes and permits the use of up to 150° F bath temperatures for high speed plating. • **Udylite Corp.**, 1651 E. Grand Blvd., Detroit 11, Mich.

For more details circle NED-768 M on enclosed inquiry slip

MOLD LUBRICANT
for plastics, ceramics, rubber

Formulated specifically for use with plastics, ceramics, acrylics, epoxies, rubber, cement, gypsum, and alkyds, Part Lube 100 release agent and mold lubricant is packaged in spray containers for easy use. It can also be used in metal stamping, dry lubrication of doors and self-tapping screws, for tapping and drilling, and as a rust inhibitor. Lubricant will remain on the surface through several cycles and promotes smooth, even flow of material. Fine mist ejection penetrates deep cavities. • **British Industries Corp.**, Dept. L, 80 Shore Rd., Port Washington, N. Y.

For more details circle NED-769 M on enclosed inquiry slip

DIXON HOSE FITTINGS for Every Industrial Hose Service IN SPECIAL METALS

In case you did not know it, nearly all products in the DIXON QUALITY LINE are readily available in Special Metals to meet the widest variety of anti-corrosion, anti-abrasion requirements—

STAINLESS STEEL • ALUMINUM
MONEL METAL • SPECIAL ALLOYS

If you need Couplings, Nipples, Menders, Clamps, Valves and other fittings for hose handling chemicals, oils, gases, sand, grout or other corrosive or abrasive materials, specify Dixon—for dependability.

From Your Hose Supplier or Industrial Distributor

DIXON Valve & Coupling Co.
GENERAL OFFICES & FACTORY—PHILADELPHIA 22, PA. BRANCHES—CHICAGO BIRMINGHAM • LOS ANGELES • HOUSTON • DIXON VALVE & COUPLING CO., LTD. TORONTO

For more details circle NED-770 M on enclosed inquiry slip

SAVE ON SAW SHARPENING

If it costs you $25.00 or more a month, let your monthly sharpening bill pay for a FOLEY SAW FILER.

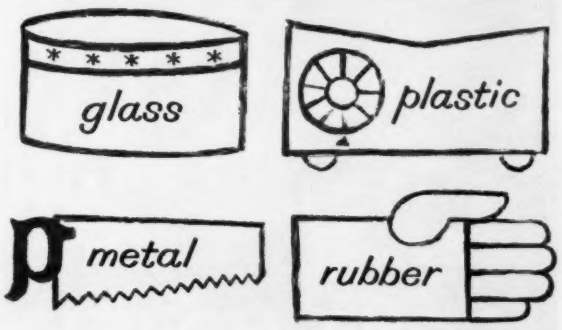
What is your monthly saw sharpening bill? Are you paying $25.00 a month or more, or sharpening saws by hand, or probably using them when too dull? If so, a Foley Saw Filer will soon pay for itself in your plant. With the Model 200 Foley Automatic Saw Filer you can sharpen both "combination" and crosscut circular saws, band saws and hand saws. No experience needed to turn out precision sharpening with a Foley. Increase your sawing production, improve your work quality, prolong the life of your saws—and let your monthly sharpening bill pay for the Foley.

30-DAY TRIAL OFFER

You may try the new Model 200 Foley Saw Filer in your own shop for 30 days. Write for literature and details of 30-day trial offer.

FOLEY MFG. CO.
3323 N. E. 5th STREET
MINNEAPOLIS 18, MINN.

For more details circle NED-771 M on enclosed inquiry slip



FLO-MASTER FELT TIP PENS AND FLO-MASTER INKS MARK ON EVERYTHING

Flo-master felt tip pens with interchangeable felt tips are widely used in industry; durable and long lasting, they prove to be the economical buy—only $3. Flo-master oil-based inks make it easy to put a permanent mark on any surface; colors, too—black, green, blue, red, yellow, brown, purple, orange.

Economical marking in many colors. Use Cado-markers for economical marking in many colors. The Cado-marker has a fixed felt tip and a built-in Flo-master ink supply. Available in 49¢ Regular Size and 89¢ refillable Size. Ideal for distribution to personnel in eight-color sets—economical, too!

CUSHMAN & DENISON
Camden, New Jersey
A SUBSIDIARY OF THE ESTERBROOK PEN COMPANY

For more details circle NED-772 M on enclosed inquiry slip

Here's How To Operate DC Motors from AC Lines With ALL of the Conveniences of Both

Check these advantages — many exclusive:

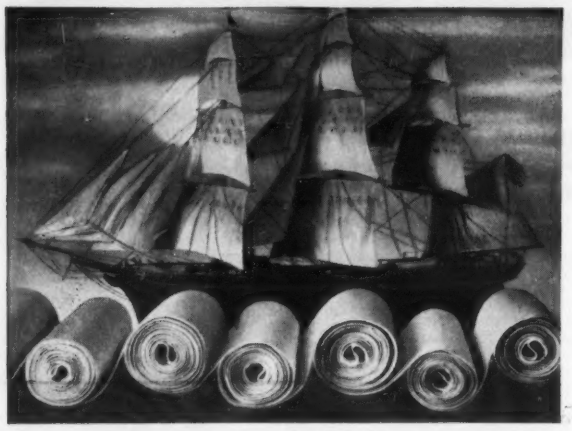
- NO torque pulsations — can control speed on the most delicate machine at fractions of an rpm
- Rated torque at any speed from rated to stalling
- S-M-O-O-T-H almost stepless speed variation
- Practically instantaneous Start-Stop-Reverse with ONE switch
- No warm-up required — no electron tubes—extra-long life
- Dynamic braking on all but the smallest models
- Installation simple — maintenance low—first cost moderate
- Ten models for d-c motors rated up to 1/15th hp to 3/4 hp. Illustrated is Type 1701-AK for 1/15th hp d-c motors: $95.00

Write for VARIAC MOTOR SPEED BULLETIN

GENERAL RADIO COMPANY
WEST CONCORD, MASSACHUSETTS

Broad Avenue at Linden, Ridgefield, N. J. NEW YORK AREA 1000 N. Seward St. LOS ANGELES 38 8055 13th St., Silver Spring, Md. WASHINGTON, D. C. 1150 York Road, Abington, Pa. PHILADELPHIA 1186 Los Altos Ave., Los Altos, Calif. SAN FRANCISCO 6605 W. North Ave., Oak Park, Ill. CHICAGO In CANADA: 99 Floral Parkway TORONTO 15

For more details circle NED-773 M on enclosed inquiry slip



SETTING SAIL INTO THE SEA OF SYNTHETIC FELTS?

...Let Troyfelt help you plot your course

TROY's only business is in the synthetics – Dacron®, Orlon® and combinations. Moreover, TROY specializes in non-woven felts, having pioneered in the development of the non-woven process.

What is the advantage of TROYFELT? Simply this: no binder is used. Eliminating chemical and fiber binders results in *far greater design versatility.* We can give you outstanding abrasion, heat and chemical resistance. Higher insulation. Greater filtering ability. Just the thickness, density, permeability or weight you want. You tell us what properties you're looking for – and in most cases we can match your needs precisely.

See how you may improve your present products . . . solve an operating problem . . . or even come up with an entirely new product. Details . . . just drop us a note. We'll send our most recent technical bulletin and samples of various TROYFELT blends.

TROYFELT ...*by the pioneers in non-woven synthetic felts*
INDUSTRIAL PRODUCTS DIVISION • TROY BLANKET MILLS
200 Madison Avenue • New York 16, New York

▲ For more details circle NED-775 M on enclosed inquiry slip ▲

DON'T MOVE!

We'll bring STRIPPIT's cost-cutting demonstration to you

Here's the newest STRIPPIT Mobile Demonstrator Unit, equipped with actual operating STRIPPIT metalworking equipment. Every day, throughout industrial America, we welcome aboard scores of production men and company executives for on-the-job proof that the STRIPPIT way is the most efficient and economical way to punch holes.

These men are watching (center) the STRIPPIT Super 30 Fabricator in action, punching out a complex hole pattern from a template mounted on the integral Duplicator. Time studies conducted in customers plants have shown savings in production time of 60 to 80% over conventional methods.

The STRIPPIT Flex-O-Drill (bottom) eliminates the need for base line drawings and vernier height gage layouts in the production of precision templates and sheet metal layouts. Also on display in the Demonstrator are a variety of STRIPPIT self-contained hole punching units.

One of these Mobile Units is in your part of the country right now. Write or call Wales STRIPPIT and ask them to put your plant on the itinerary.

A UNIT OF HOUDAILLE INDUSTRIES, INC.

WALES **STRIPPIT** INC.
227 Buell Road • Akron, New York
In Canada: Strippit Tool & Machine Company, Brampton, Ontario

▲ For more details circle NED-776 M on enclosed inquiry slip ▲

New Literature & Catalogs

Air Cutting, Cleaning Tool

S. S. White Dental Mfg. Co., S. S. White Industrial Div.—Features of both single and twin jet Airbrasive cutting and cleaning tools are pointed out in 16-page Bulletin 6006. Tool cuts or abrades germanium, silicon, mica, glass, fragile crystals, ceramics, and other hard or brittle materials. Typical uses are cutting and cleaning semiconductor materials, adjusting micromodule elements, abrading contact paths on potentiometers, and deburring precision parts.

▲ For more details circle NED-777 M on enclosed inquiry slip ▲

Specialty Hardware

Stewart-Warner Corp.—One of the most complete catalogs available on automotive and specialty hardware, Form 38-133 covers hood catches, fasteners, door holders and handles, dovetails, and other standard items. Special items for use in the truck, hood, cab and body, tractor, road machinery, lift truck, and related fields are also listed.

▲ For more details circle NED-778 M on enclosed inquiry slip ▲

High Pressure Hydraulic Cylinder

Tomkins-Johnson Co. — Interchangeable with all standard high pressure, square head hydraulic cylinders, the Model SH cylinder features solid steel head, minimum center line-to-center line mounting, and self-adjusting piston rod packing. These features, plus others and specifications and mounting data are found in illustrated Bulletin SH-6-60.

▲ For more details circle NED-779 M on enclosed inquiry slip ▲

Machining Heads

Master Mfg. Co.—Dimensional data, specifications, and design features relative to Master machining heads for milling, boring, and drilling are presented in 16-page Catalog 160. Data cover LC independent heads for use as building blocks in special machines; PMH heads, similar to the LC units except for vertical travel feature; and Hi-Speed heads for machining nonferrous parts.

▲ For more details circle NED-780 M on enclosed inquiry slip ▲

Bronze Bearing Design

Moccasin Bushing Co.—"Problem Work Book for Bronze Bearing Design" is a 7-page bulletin which presents basic material on bearing design. Sections are devoted to full film, mixed film, and complete boundary operation. Work sheets are included to assist in making calculations.

▲ For more details circle NED-781 M on enclosed inquiry slip ▲

Air Tools, Motors & Accessories

Aro Equipment Corp.—96-page illustrated air tool Catalog 64 groups its contents into nine sections covering portable air tools, self-feed drilling units, air hoists, power motors, special tools, and accessories. Technical data and specifications are included.

▲ For more details circle NED-782 M on enclosed inquiry slip ▲

DESIGNED FOR MODERN PIPING!

THE ECON-O-MISER BALL VALVE

COMPARE THE ECON-O-MISER WITH ANY ON-OFF VALVE!

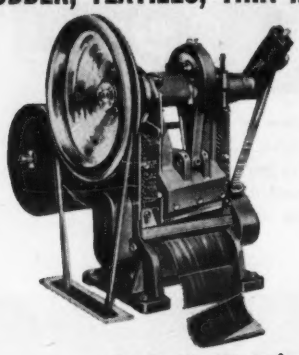
- Remove 4 bolts — the center section lifts out — unions are eliminated!
- ¼" through 6" size range
- Quarter-turn operation
- Smooth round Two Way Flow
- No metal to metal contact — wiping action assures longer life

WRITE FOR COMPLETE TECHNICAL INFORMATION!

WORCESTER
VALVE CO., INC. / WORCESTER 10, MASS.

▲ For more details circle NED-783 M on enclosed inquiry slip ▲

AUTOGIL *Cut* **PLASTICS, PAPER, FELT, RUBBER, TEXTILES, THIN METALS**



The Power Packaged AUTOMATIC GUILLOTINE

- Cut 5", 12", 15", 18" or 24" widths
- Cut 0 to 96" lengths (infinitely variable)
- Cut up to 3/16" thicknesses
- 120 cuts per minute
- Three Sizes – Two Styles – One just right for your cutting job

Ask For Autogil Literature

HOBBS EST. 1882 **Manufacturing Company**
41-L Salisbury St., Worcester 5, Mass.
Branch Offices: Irvington, N. J., Chicago, Cleveland, Los Angeles, Louisville, Greenville, S. C., Toronto, Can.
352-0

▲ For more details circle NED-784 M on enclosed inquiry slip ▲

SUPER ALUMINUM GRATING

Extra Strong! Exclusive swaging and forming process prevents cross bars from turning, twisting, coming loose or falling out . . . provides greater strength and rigidity than gratings using obsolete methods of joining bars. Non-rusting and corrosion-resistant . . . ideal where chemical conditions prevail.

Lighter Weight! High strength to weight ratio. Minimum deflection . . . easier to install.

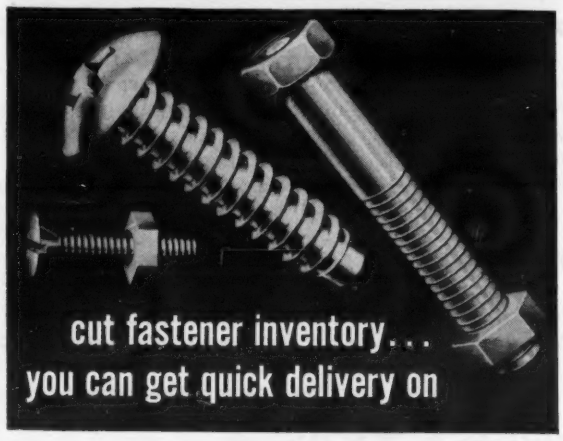
Better Looking! Can be used for decorative purposes, sun shades, grilles, etc. Can be anodized in sunfast colors to blend with surroundings.

Available with serrated or plain bars—in all sizes to meet practically every requirement.

Write for Bulletin C14R
Dept. L-10, E. Seventh Ave., Gary, Indiana
*Patent Pending

ROCKWELL-STANDARD CORPORATION
Grating Division, Gary, Indiana

▲ For more details circle NED-785 M on enclosed inquiry slip ▲



Alcoa Aluminum Fasteners

Any type! Any size! High-strength, heat-treated alloys . . . low prices and *fast delivery!* Simply look in the Yellow Pages for your local Alcoa distributor. He has the largest line of Alcoa® Aluminum Fasteners available. He can make fast delivery from his complete stocks; you can keep fastener inventories down.

For more data, samples, check the coupon below.

▲ For more details circle NED-786 M on enclosed inquiry slip ▲

Alcoa Aluminum Bearing Stock

For bearings and bushings that cost *less* . . . perform *better* . . . last *longer*, call your nearest Bunting Distributor. Ask him for Alcoa® Aluminum Bearing Stock. It's easy to machine . . . lasts longer in tough service . . . runs as much as 20 degrees cooler than other materials . . . and withstands loads up to 10,000 psi. Call your local Bunting Distributor today.

For more information, check coupon below.

▲ For more details circle NED-787 M on enclosed inquiry slip ▲

without adding facilities! call on

Alcoa Jobbing Division

End production log jams . . . get the use of fabricating facilities *without* capital investment by having Alcoa's Jobbing Division do the job for you. Get expert engineering and design help, too! Call your nearest Alcoa sales office and learn how the Jobbing Division can help you.

For free, 16-page booklet describing this service, check the coupon at right.

▲ For more details circle NED-788 M on enclosed inquiry slip ▲

New Processes & Materials

PAINT BRUSH SOFTENER
applied from aerosol spray can

Paint brushes will stay soft without cleaning when nonflammable, nontoxic Sta-Soft is applied on them from a 12-oz aerosol spray can. Product also softens hard brushes, cleans paint off face and hands without irritation, and allows thorough brush cleaning in soap or detergent and water. It need not be removed when painting is resumed after a short period, or after an extended period when the brush is stored in aluminum foil or another nonabsorbent wrap. Softener may be used with any paint except water emulsion type, as well as with varnish, lacquers, enamels, floor sealers, primers, and synthetic finishes. Price is $1.98 per can. • **Crown Industrial Products Co.**, Dept. ND-5, 931 Amsterdam St., Woodstock, Ill.

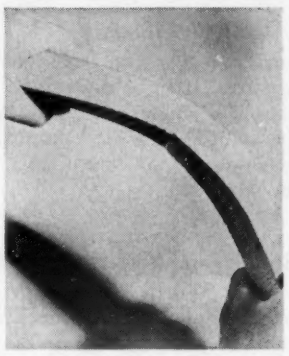
▲ For more details circle NED-789 M on enclosed inquiry slip ▲

MACHINE ANCHORING CEMENT
also serves as concrete floor patch

Applied cold after adding water, Garonite cement is used as a bolt anchoring medium for any type of machinery, including heavy duty vibrating equipment. Also suited for patching concrete floors, it sets rapidly to permit use of machinery within ½ to 1 hr, depending upon size and weight. Compression strength at 1 hr is 5000 psi; at full strength it is 12,000 psi. • **Garon Products Inc.**, Longfellow & Viele Avenues, Bronx 59, N. Y.

▲ For more details circle NED-790 M on enclosed inquiry slip ▲

VINYL FOAM ADHESIVE
bonds fast for production speeds



"Quick grab" is afforded by Bond-Master R379-20 adhesive for production-speed bonding of closed-cell vinyl foam to itself, to fabric, as well as to phenolic plastics, metal, wood, and other rigid and flexible materials. The strong, flexible, "soft-seam" adhesive withstands solvent attack of vinyl marine coatings, salt water and high humidity, fatigue and vibration, hot oil, gasoline, aromatic fuels and organic solvents, and prolonged exposure to 250 to 350° F. The adhesive achieves bonds of foam-tearing strength instantly upon contact. It can be brushed, roller coated, or sprayed. • **Rubber & Asbestos Corp.**, Dept. P, 225 Belleville Ave., Bloomfield, N. J.

▲ For more details circle NED-791 M on enclosed inquiry slip ▲

stop slipping accidents with

Alcoa Aluminum Abrasive Tread Plate

Provide lasting protection for employees and stop production-delaying accidents with Alcoa® Aluminum Abrasive Tread Plate. Made with tough particles of fused aluminum oxide, this lightweight and corrosion-resistant plate is easily installed . . . and it's *maintenance-free!* Wear *renews* the surface, uncovers additional abrasive particles! It's slip-proof on wet, oily or greasy floors. Install Alcoa Aluminum Abrasive Tread Plate and be safe.

For more information and free sample, check coupon below.

▲ For more details circle NED-792 M on enclosed inquiry slip ▲

Alcoa Aluminum Welding Materials

Improve finished quality by using high-quality Alcoa® Aluminum welding and brazing materials. The same quality assures you of faster joining, and from Alcoa you get the benefits of extensive research in alloys, techniques and joining methods. Call on Alcoa for IG welding electrodes • coiled welding and brazing rod • straight-length welding and brazing rod • welding, brazing and soldering flux • solder.

Call your nearest Alcoa distributor or your local Alcoa sales office.
For loan of welding films and the latest welding design information, check coupon below.

▲ For more details circle NED-793 M on enclosed inquiry slip ▲

Here's the coupon that will get fast results from the broadest aluminum distribution organization in the world . . .

Alcoa Sales Offices and Distributors

FOR EVEN FASTER SERVICE . . . look in the Yellow Pages under "Aluminum." Call the Alcoa sales office or distributor nearest you (located strategically throughout America!). You can rely on the prompt service, fully stocked warehouses and complete technical information from Alcoa!

Aluminum Company of America
1763-M Alcoa Building, Pittsburgh 19, Pa.

Please send me samples and/or information about:

☐ ALCOA ABRASIVE TREAD PLATE ☐ ALCOA ALUMINUM BEARING STOCK
☐ ALCOA ALUMINUM INDUSTRIAL FASTENERS ☐ LOAN OF WELDING FILMS
☐ ALCOA ALUMINUM FABRICATING FACILITIES ☐ LATEST WELDING DESIGN INFORMATION

Name _____
Title _____
Company _____
Street Address _____
City _____ Zone _____ State _____

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

Vlchek Plastic Boxes for every need

Vlchek Model P-824
24 compartment, clear plastic box
one of largest compartmented boxes ever molded

If you require plastic boxes for packaging your products . . . or for use in plant and office operations, see Vlchek.

Vlchek, pioneer plastics manufacturer, stocks boxes in 30 standard sizes . . . ready for immediate shipment. These are available in 1,000 compartment arrangements . . . crystal clear, tinted transparent, or solid colors. Complete imprinting service.

Or, if you need a special box of any type or shape, Vlchek will design and custom-manufacture it. Write us today. Our representative will call promptly. AA-9913

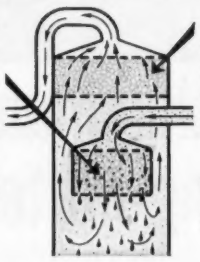
The Vlchek Tool Co.
SINCE 1895
Cleveland 4, Ohio

▲ For more details circle NED-794 M on enclosed inquiry slip ▲

ANNOUNCING King
COMPRESSED AIR FILTERS
20 to 200 scfm flow capacity — 1/4" to 2" pipe size

• Give EXTRA-CLEAN AIR
• Go MONTHS WITHOUT MAINTENANCE
..thanks to new kind of filtering action.
COALESCENCE is the secret:

1 WET FILTER BED in Scrubber Cartridge causes fog and mist to COALESCE into large drops that fall into sump. Takes out dirt, water and oil. Down-flow provides self-cleaning. Lasts for months without maintenance.



2 Dry Polisher Cartridge gives final cleaning. Scrubber Cartridge does 98% of the work, so Polisher also lasts for months.

Cartridges are disposable. One size fits all King Filters.

FREE CATALOG gives ALL the facts; lists 60 standard models. Write, wire or phone today for Catalog 6000.

KING ENGINEERING CORP.
3223 S. State St. Ann Arbor, Mich.
LIQUID LEVEL GAGES, MANOMETERS, ACCESSORIES—SINCE 1937

▲ For more details circle NED-795 M on enclosed inquiry slip ▲

CONVEYORS! Keep 'em CLEAN with JENKINS' METLKOR BRUSHES

Jenkins' METLKORS automatically clean all kinds of conveyors . . . rubber covered, fabric, band, mesh, bar, plate, string. Adapt easily to any system . . . save time, money. Nylon bristles and metal cores resist corrosion.

1960 Catalog Packed With Data Write Today!

Specify Jenkins' METLKOR—the original—the best Metal Core brush

METLKOR® CYLINDER BRUSHES and LIFEWOOD® WOOD BACKED BRUSHES

M. W. JENKINS' SONS, INC.
Serving Industry for 80 Years
P.O. Box 68, Dept. 15, Cedar Grove, Essex County, N. J. • CEnter 9-5150

▲ For more details circle NED-796 M on enclosed inquiry slip ▲

New Literature & Catalogs

Locknuts

Palnut Co.—24-page Catalog 592-A describes and shows a complete line of spring tempered locknuts, including hex, integral washer, acorn, wing, and adjusting nut types. Fasteners are offered in a variety of materials, finishes, sizes, and load ratings.

▲ For more details circle NED-797 M on enclosed inquiry slip ▲

Photoelectric & Electronic Controls

Autotron, Inc.—Counting, sorting, weighing, inspection, measuring, and other functions possible with photoelectric and other electronic controls are outlined and explained in 24-page Catalog 60. Sketches and pictures show uses. Transistorized, timing, impact, surge, and photoelectric types are covered.

▲ For more details circle NED-798 M on enclosed inquiry slip ▲

Plant Protection Handbook

Offered as a guide for anyone responsible for plant protection, from top management personnel to watchmen, the "Plant Protection Handbook" is a pocket-size manual. Subjects covered include: Who needs a guard? How many guards do you need? Selecting the guard. What every guard should know. First aid. Intruders. Sprinkler systems. Report writing. Free copy is available only by writing on your company letterhead to: Detex Watchclock Corp., 76 Varick St., New York 13, N. Y.

▲ For more details circle NED-799 M on enclosed inquiry slip ▲

Flying Cut-Off Press Techniques

Federal Press Co.—Evaluation of the merits of using power presses designed for cutting off roll-formed shapes on the fly is the purpose of 8-page technical bulletin. Factors such as stopping mechanisms, press stroke, clutch type, height adjustments, part ejection, and type of die are discussed.

▲ For more details circle NED-800 M on enclosed inquiry slip ▲

Armored Tube Bundles

Crescent Insulated Wire & Cable Co.—Spirally cabled tubes for instrument and control systems comprise the Armored Multitube line which is offered with copper, aluminum, steel, polyethylene, and nylon tubing in diameters to ½ in. and with various corrosion resistant sheaths and interlocked metallic armor. Properties and application data are contained in 12-page Bulletin 960.

▲ For more details circle NED-801 M on enclosed inquiry slip ▲

Specifying Roller Chain Sprockets

Fort Worth Steel & Machinery Co.—The "Fort Worth Roller Chain Sprocket Specification Guide" contains 36 pages of data on Style B and C sprockets, Style A plate sprockets, QD (quick-demountable) sprockets and bushings, and roller chain. Over 1000 sprockets are stocked in sizes from ⅜ to 2½-in. pitch and with from 8 to 112 teeth.

▲ For more details circle NED-802 M on enclosed inquiry slip ▲

INKS and the MACHINES that use them

ACRO INKS for industrial product marking are specially formulated to mark your product.

No. 301 ACRO-PRINTER is one of several printing and color filling machines for accurate color, design or lettering application. An ink roll and platen machine to make hand printing easy.

No. 401-A Operates from shop air-line requiring only hand feeding. This is the power model ACROPRINTER.

Write today for latest folder of Printing and Marking Inks and Machines.

ACROMARK
THE ACROMARK COMPANY
7-11 MORRELL ST., ELIZABETH, NEW JERSEY
"The Original Marking Specialists"

▲ For more details circle NED-803 M on enclosed inquiry slip ▲

Rust Control Guidance

Ludlow Corp., Ludlow Papers Div.—Cartoon treatment in 16-page comic style booklet serves as a ready reference on the use of Vapor Phase Inhibiting paper wrapping to protect metal parts and products and to prevent rust in handling, shipping, or storage. Factual easily-assimilated information is given.

▲ For more details circle NED-804 M on enclosed inquiry slip ▲

Pneumatic Clutch & Brake

Federal Machine & Welder Co.—Bulletin 52100 pictures and describes the Warco pneumatic clutch and brake which is designed for replacement use on all makes of presses.

▲ For more details circle NED-805 M on enclosed inquiry slip ▲

Packaging for Safe Shipment

Signode Steel Strapping Co.—"Better Ways to Package, Unitize, and Ship" is a pocket-size 40-page reference guide to modern strapping methods and tools. Power, manual, and automated equipment are shown and described. Charts aid in selecting seals and strapping for specific applications.

▲ For more details circle NED-806 M on enclosed inquiry slip ▲

Automatic Transmissions

Morse Chain Co.—Particularly adaptable to small vehicle drives, but also usable for any low power application, Power-Flow transmissions are fully automatic. They are suited for use as automatic clutch or speed regulator and operate on torque-sensitive pulley principle with a V-belt. Engagement is automatic at preselected speed. Units with ratings from 2 to 25 hp are described in 8-page Catalog PFT-60.

▲ For more details circle NED-807 M on enclosed inquiry slip ▲

Training on Transistor Circuits

International Correspondence Schools—A new course, "Principles of Semiconductor-Transistor Circuits" is offered for home study use. The texts are designed to up-date industrial personnel in this rapidly expanding field. Principles, applications, technical data, circuit analysis, and related information are adapted for self-teaching. Full details are available.

▲ For more details circle NED-808 M on enclosed inquiry slip ▲

Metal Decorating Ovens

Young Brothers Co.—Metal decorating ovens for production drying, baking, or curing of coated, lithographed, or otherwise imprinted sheet materials or products are described in 24-page Bulletin L-9. Auxiliary equipment such as automatic sheet handlers, feed tables, conveyors, and controls are also covered.

▲ For more details circle NED-809 M on enclosed inquiry slip ▲

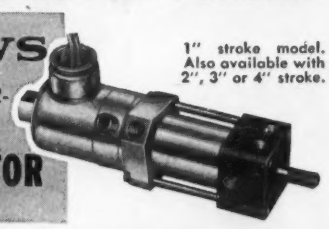
Safety Equipment

Flood Safety Products Co.—Bulletins No. 20, 21, and 22 of 2, 4, and 4 pages, respectively, contain capsule descriptions of face shields, welding headgear, and cap and welding helmet combinations.

▲ For more details circle NED-810 M on enclosed inquiry slip ▲

LOW COST SOLUTION TO A THOUSAND PRODUCTION PROBLEMS...

Bellows CONTROLLED-AIR-POWERED HAN-D-MOTOR



1" stroke model. Also available with 2", 3" or 4" stroke.

CLAMPING
FEEDING
POSITIONING
EJECTING
TRIGGERING

The cost-cutting applications of the rugged little Han-D-Motor are limited only by man's ingenuity.

Consisting of an air cylinder with integrally-mounted solenoid valve, the Han-D-Motor is a complete work unit which mounts in any position, can be controlled by switches, relays, timers and similar electrical devices, provides thrust approximately equal to air line pressure, can be synchronized with any related operation.

Write for free Bulletin HD-20R.
Address: Bellows-Valvair, Akron 9, Ohio, Dept. NED 1260.

Get complete information on Bellows Han-D-Motors and how they can cut costs in your plant. ● 13128-3

Bellows-Valvair
AKRON 9, OHIO
DIVISION OF INTERNATIONAL BASIC ECONOMY CORPORATION (IBEC)

▲ For more details circle NED-811 M on enclosed inquiry slip ▲

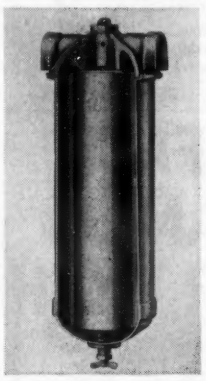
New Processes & Materials

TUBING GAGE
for metal exhaust and blower tubing

Easy to use Kwick Sizer gage measures the outside diameters of all-metal Econoflex and Steelflex standard 0.012-in. strip exhaust and blower tubing in a 7/8 to 3 7/8-in. diameter range. By setting the inner wheel of the free pocket-size gage on the flat of the tubing, then closing its arms on the flat, the outside diameter is seen in windows. • **Universal Metal Hose Co.,** 2133 S. Kedzie Ave., Chicago 23, Ill.

▲ For more details circle **NED-812 M** on enclosed inquiry slip ▲

POROUS METAL FILTER
for hot, viscous, corrosive fluids



Made of sintered Type 316 stainless steel, this CFC porous metal filter element is available in 40, 20, 10, 5, and 2-micron particle-retention ratings to fit all Fulflo filters. It will handle viscous, high temperature, or corrosive liquids and gases; has high dirt-holding capacity; and can be cleaned by firing, chemical or ultrasonic treatment, or back-flushing. Filter withstands high pressure, vibration, and thermal shock. • **Commercial Filters Corp.,** 2 Main St., Melrose 76, Mass.

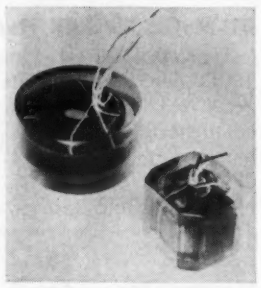
▲ For more details circle **NED-813 M** on enclosed inquiry slip ▲

SEALING COMPOUND
for threaded fittings and gaskets

Suited for use with up to 100,000-psi hydraulic fluids, steam, air, gases, water, and chemicals, Led-Plate No. 250 antiseize sealing compound is corrosion resistant. It is also UL-listed for sealing propane, butane, gasoline, and petroleum oil lines. Compound is used for the assembly of threaded fittings or gaskets and makes possible easy disassembly at any time. Application range is −350 to 2987° F. Product is available in small containers with a regular label or private label to accompany other products. • **Armite Laboratories,** 6609 Broad St., Los Angeles 1, Calif.

▲ For more details circle **NED-814 M** on enclosed inquiry slip ▲

EPOXY CASTING POWDER
needs no catalyst, liquefies at 110° C



Since No. 135E Maraset epoxy casting powder is a single-component resin, no catalyst is needed when used to encapsulate electrical and electronic components. It liquefies at 110° C and is poured over part to be protected in a mold that has been lubricated and preheated to 110° C. After a 12-hr oven cure at 125° C, hardened encapsulation can easily be removed from mold. Composition protects part against severe mechanical and thermal shock as well as exposure to water and chemicals. It meets military transformer specifications for continuous operation at Class H temperatures. • **Marblette Corp.,** 37-31 30th St., Long Island City 1, N. Y.

▲ For more details circle **NED-816 M** on enclosed inquiry slip ▲

MASONRY FACADE COATING
mixed with sand for textured look

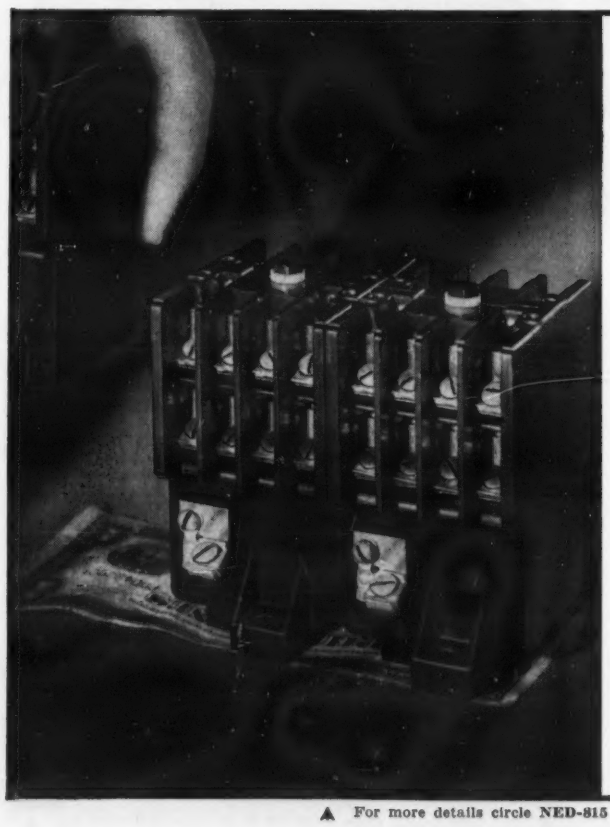
Weather-resistant qualities of polyurethane are incorporated in Bostik masonry facade coating which can be applied over concrete, stucco, cement, or cinder block. Sand aggregate is mixed with the polyurethane by special equipment as it is sprayed, creating a textured surface with ability to "bridge" small cracks and other surface imperfections. Size of aggregate particle can be varied to achieve anything from a smooth, glossy surface to a pebbly, rough texture with a soft, flat hue. Standard colors are available and can be mixed to yield any hue from deep to pastel. • **B. B. Chemical Co.,** 784 Memorial Dr., Cambridge, Mass.

▲ For more details circle **NED-817 M** on enclosed inquiry slip ▲

DRY LUBRICANT
spray-on type will not run

Metal, paint, rubber, glass, plastic, and leather surfaces can be lubricated with Slipspray, a multipurpose dry lubricant dispensed from an aerosol can. Its active ingredient is Du Pont TLT-17 fluorocarbon telomer. The product will not stain, run, or pick up dirt, and is not affected by water, light, oil, or solvents. It makes drawers, doors, windows, and zippers slide easily; acts as a corrosion retardant for battery terminals, stored tools, and other equipment; and helps to keep snow and mud from sticking to snow plows and other equipment. Price is $1.25 per can. • **E. I. du Pont de Nemours & Co.,** Wilmington 98, Del.

▲ For more details circle **NED-818 M** on enclosed inquiry slip ▲



CONTROL

New! Space savingest relay you've ever seen: New Cutler-Hammer "Compact 300"

Cutler-Hammer's new, versatile 300 volt 6 amp., industrial control relay is so reliable it's permanently sealed. Bifurcated contacts add even more millions of operations.

So compact you can get 8 circuits in a panel space only 2" wide by 2¾" high. 2, 3, 4, 6, 8 poles with any combination of N.O. or N.C. contacts available. Add new "mechanical memory" latch at any time. Same life as relay. Get full details in PUB. ED-L079-Y251.

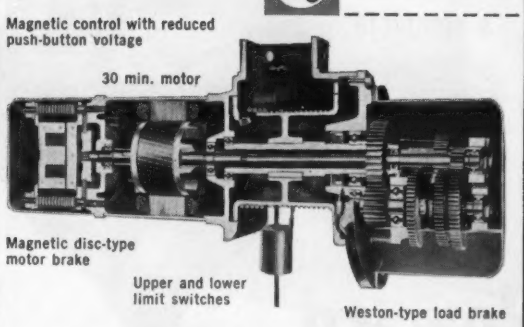
WHAT'S NEW? ASK...

CUTLER-HAMMER

Cutler-Hammer Inc., Milwaukee, Wisconsin • Division: Airborne Instruments Laboratory • Subsidiary: Cutler-Hammer International, C. A. Associates: Canadian Cutler-Hammer, Ltd.; Cutler-Hammer Mexicana, S. A.

▲ For more details circle **NED-815 M** on enclosed inquiry slip ▲

R&M HOISTS/CRANES



NEW LOW-COST HOIST

CAPACITIES: ¼, ½, 1, and 2 tons—New Type J wire rope hoists, in three frame sizes, give you important industrial quality features at no extra cost. R&M high torque hoist motor has highest time rating of any in the low price hoist field—30 min., 55° C. Magnetic disc type motor brake, Weston-type load brake, jam-proof upper and lower limit switches—all contribute to long, virtually trouble-free life. Tough aluminum alloy frame. Full magnetic push-button control with reduced push-button voltage. Plain, geared, or motorized trolleys available. Request Bulletin 905 today. **Robbins & Myers, Inc., Hoist & Crane Division, Springfield, Ohio.**

ROBBINS & MYERS

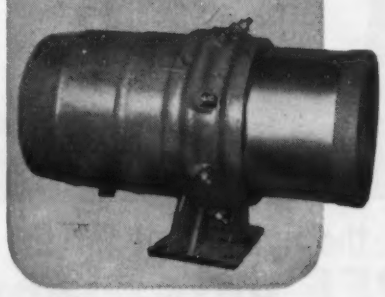
hoists, cranes, Moyno® pumps, motors, Propellair® fans

▲ For more details circle **NED-819 M** on enclosed inquiry slip ▲

important points about joints

- Yarway Gun-Pakt Joints are serviced *in the line under full steam pressure.*
- Costly shutdowns eliminated.
- Maintenance records show 1 manhour per year per joint.
- Fewer expansion joints needed per length of pipeline with Gun-Pakt.

YARWAY GUN-PAKT EXPANSION JOINTS



For new Yarway Expansion Joint Catalog EJ-1916 write YARNALL-WARING CO., 131 Mermaid Lane, Phila. 18, Pa.

go YARWAY with confidence

▲ For more details circle **NED-820 M** on enclosed inquiry slip ▲

a complete selection of **low cost** standard models

Howard motor parts sets

Ratings from 1/200 to 1 H.P.

Howard standard motor parts include armatures and fields, brushes and brushholders, rotors, stators and fans. If you use motor parts, write Howard for complete information.

POWERED BY HOWARD

HOWARD INDUSTRIES, INC., 1740 State Street, Racine, Wisconsin
Divisions: Electric Motor Corp., Cyclohm Motor Corp., Loyd Scruggs Co.

For more details circle NED-824 M on enclosed inquiry slip

SHOPMOBILE

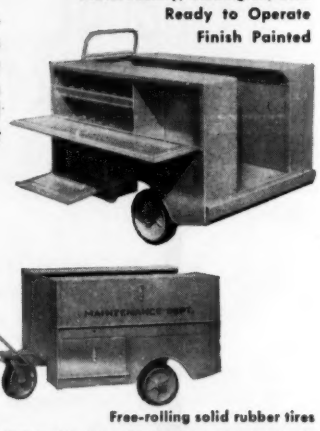
PAYS FOR ITSELF IN 90 DAYS!

SAVES MANY HOURS OF MAINTENANCE TIME — SAVES TRIPS — SPEEDS WORK

TAKE THE WORKSHOP TO THE WORK

SHOPMOBILE is an all-steel welded workshop on wheels with roomy storage compartments that can be locked and workbench surfaces at working height.

Only $249.00
F.O.B. Factory, Cardington, Ohio
Ready to Operate
Finish Painted



Free-rolling solid rubber tires

MECHANIZE YOUR MAINTENANCE DEPARTMENTS! WRITE TODAY FOR FULL INFORMATION.

STAHL METAL PRODUCTS, INC.
4750 W. 160th St. • Cleveland 35, Ohio
TELEPHONE: WInton 1-2377

For more details circle NED-825 M on enclosed inquiry slip

Pick the right paint for the job

***FREE* PAINT INDEX**

Whatever your industrial painting problem, there's *one* paint especially formulated to give the *most effective* protection. With this handy guide, choosing that paint is simple and easy. Profitable, too, because the correct choice will wear longer, save you money on costly repaints. Write for your free money-saving Paint Index today!

PARKER RUST PROOF PRODUCTS

TROPICAL PAINT COMPANY
1124-1264 W. 70th, Cleveland 2, Ohio
HEAVY-DUTY MAINTENANCE PAINTS SINCE 1883 • SUBSIDIARY OF PARKER RUST PROOF COMPANY

For more details circle NED-826 M on enclosed inquiry slip

New Literature & Catalogs

All-Metal Flexible Hose

Universal Metal Hose Co.—20-page Catalog ID-100D describes all-metal flexible hose for conveying gases, solids, and fluids; for vibration control; and to compensate for motion or misalignment under high temperature, pressure, vacuum, or abrasive conditions. The variety of applications shown reveal the versatility of these flexible hose products.

For more details circle NED-827 M on enclosed inquiry slip

Exciting, Measuring & Controlling Vibration

Textron Electronics, Inc., MB Electronics Div.—Principles of vibration testing are described in 16-page illustrated Bulletin 420G which also gives specifications for electrodynamic vibration exciters, electrohydraulic shaker systems, electronic power supplies, and sine and random motion electronic control consoles. Exciters have 1.2 to 100,000-lb maximum force outputs.

For more details circle NED-828 M on enclosed inquiry slip

Self-Adhesive Laminates

Avery Adhesive Products, Inc., Fasson Products Div.—Swatches attached to this 4-page brochure are examples of the types of self-adhesive Mylar-vinyl laminates available for decorative trim. Seventeen different patterns and finishes are included. Material is offered in rolls, sheets, or strips and can be die cut, stamped, embossed, and imprinted.

For more details circle NED-829 M on enclosed inquiry slip

Scissors, Shears & Snips

Clauss Cutlery Co.—Standard size file folder contains descriptions, illustrations, prices, and other data on 120 models of scissors, shears, snips, and tweezers. Broad line includes products for many industrial uses.

For more details circle NED-830 M on enclosed inquiry slip

Proximity Switches

Electro Products Laboratories, Inc.—Sensing heads of proximity switches detailed in 8-page illustrated Bulletin EDPS-80 are actuated by both magnetic and nonmagnetic metals without physical contact. An electrical impulse automatically actuates a relay to control electrical or electromechanical devices through a control amplifier. Selection guide and specifications are included.

For more details circle NED-831 M on enclosed inquiry slip

Indented Marking Equipment

Noble & Westbrook Mfg. Co.—Guide to the selection of basic permanent indented marking machines and related accessories contains 36 pages of illustrated information. Sections are devoted to roll marking, press stamping, hand stamping, graduating, marking dies, and tools.

For more details circle NED-832 M on enclosed inquiry slip

Fluid Accumulators

Hale Fire Pump Co., Fluid Power Div.—Detailed drawings and specifications on accumulators with 1-pt to 23-gal capacities are found in 23-page catalog. Besides descriptive data, a pressure-volume curve is included for each model.

For more details circle NED-833 M on enclosed inquiry slip

Wire Rope Slings

Colorado Fuel & Iron Corp.—Descriptions, illustrations, and specifications for an extensive line of Wickwire wire rope slings are contained in 84-page revised catalog. Information on how to choose and use the slings, and illustrated instructions on the basic rules of hitching are among contents.

For more details circle NED-834 M on enclosed inquiry slip

Bibliography on Thermoelectricity

AMP Inc.—Bibliography on thermoelectricity has been compiled by this company, a maker of electrical terminations and electronic components. Critical commentary on each of the listed articles is included.

For more details circle NED-835 M on enclosed inquiry slip

Conversion Factors Chart

Precision Equipment Co.—Among the many conversions on free wall chart are such common ones as inches to centimeters and watts to horsepower, plus such difficult-to-locate ones as centimeters per second to miles per hour, cubic feet to liters, microns to meters, and quintal to pounds.

For more details circle NED-836 M on enclosed inquiry slip

NEWS from the NRC Vacuum MICRONICLE*

New 6" vacuum pump —70% more speed— no loss of reliability

Upgraded performance is but half the story on the new NRC Model H6-1500. Compared with its predecessor it assures: *Speed* — 1500 l/s, up 70%. *Forepressure Tolerance* — 700 microns, up 275%. *Backstreaming* — less than 0.03 mg/cm²/min, down 40%. *Height* — 18½", down 34%. *Blank-off* — as low as 10^{-10} mm Hg in trapped UHV system.

The other half is the way it can do all this without carefully regulated power and water supplies, oversized backing pumps, delicate pump oils, or frequent maintenance. Stainless steel body — 4-stage fractionating jet assembly (securely anchored yet demountable in 15 sec.) — easily removable, long-lived "cast-in" heater — silver soldered cooling coils — all keep operating and maintenance costs low. Original cost is low, only $495.

*Send for FREE periodical containing details on H6-1500 and other news about high vacuums. Dept.ED-12,160 Charlemont St., Newton 61, Mass.

NRC EQUIPMENT CORPORATION

NE 0-17

A Subsidiary of National Research Corporation

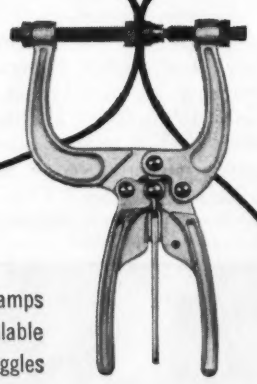
For more details circle NED-837 M on enclosed inquiry slip

IT'S A FACT YOU CAN DO BETTER WITH

DE-STA-CO

TOGGLE CLAMP POWER

CHOOSE FROM OVER 140 MODELS, 13 BASIC STYLES AT PRESSURES OF 50-10,000 POUNDS



De-Sta-Co Toggle Clamps are immediately available in sizes from Tiny Toggles with 42 lbs. holding pressure to giant, air-operated models with tons of holding power . . . and for special needs we'll adapt models for you. It will pay to inform yourself about De-Sta-Co features.

FOR YOUR NEARBY DISTRIBUTOR CONSULT YOUR YELLOW PAGES!

FOR MORE FACTS

PHONE, WIRE OR WRITE FOR INFORMATIVE CATALOG

YOU CAN DEPEND ON DE-STA-CO

DETROIT STAMPING COMPANY

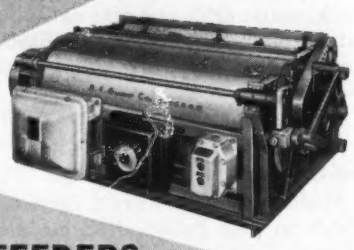
350 MIDLAND AVENUE
DETROIT 3, MICHIGAN

DE-STA-CO

For more details circle NED-838 M on enclosed inquiry slip

Regulate Bulk Feeding . . .

and prevent production choke-ups!



DRAVER FEEDERS

now available with automatic timing controls

Prevent overloading of production machines. Accurate, trade-proved Draver Feeders regulate the flow of dry free- or nonfree-flowing products . . . keep processing equipment operating at most efficient capacity . . . prevent machine failure and downtime. Now available with timing controls, for feeding to continuous processes at automatic intervals. Capacities from minute quantities up to thousands of pounds per hour. What is your bulk feeding problem? Write our engineering department for a solution, without obligation.

B. F. GUMP CO.
Engineers and Manufacturers since 1872
1336 South Cicero Avenue, Chicago 50, Illinois

SALES AND SERVICE | New York 36—Jabez Burns and Sons, Inc.—600 W. 43rd St. San Francisco 5—Tempo-Vane Mfg. Co.—330 First St. Dallas 2—J. B. Williams—1026 Young St.

For more details circle NED-839 M on enclosed inquiry slip

• **Centerless Ground to extreme accuracy. Special new-type Equipment, assures concentric chamfered or formed ends—no cut-off burrs.**

Dowel—Straight—Countersunk—Angle and Spherical Ends .020" to .1875" Diam. .125" to 2" Length

Precise Specifications Accurately met. If requested on order, a surface analysis tape, showing surface in micro-inch measurements, will be furnished. Tape magnifies 39,370 times.

Small orders or volume production to your exact requirements and material specifications.

Quality Precision Work! Prompt Deliveries! Prices you will like! SEND US PRINTS FOR QUOTATION

COMMERCIAL CENTERLESS GRINDING COMPANY
6605 CEDAR AVE., CLEVELAND 3, OHIO
Phone: ENdicott 1-3412

For more details circle NED-840 M on enclosed inquiry slip

Hobbs DUAL CIRCUIT PRESSURE SWITCHES

Add a NEW DIMENSION to Pressure Activation!

DOUBLE DUTY! Disconnects one electrical circuit while placing the other in operation. Industry-approved for a wide range of applications in dual circuit activation of various types of instruments, warning signals, safety devices, fuel pumps — in many other ways for making and breaking circuits. Ideal for locking out a starting motor while the engine is running. Can be used with oil or air . . . or with standpipe, almost any liquid or gas.

- Non-ferrous pressure chamber
- Alloy contacts
- Phosphor-bronze diaphragm
- Preset at factory

Available in pound setting specifications in both circuits within ranges of 3-6, 7-14 and 15-60 psi. Compact — only 1-11/16" diameter. Pressure assembled and pretested at 150 psi. Designed for use on direct current.

A COMPLETE LINE OF PRESSURE SWITCHES

Also available — a wide selection of single circuit pressure switches. Built by the manufacturers of Hobbs Running Time Meters and Shock-Mounted Head Lights. Distributors in principal cities . . . WRITE FOR CATALOG PS605.

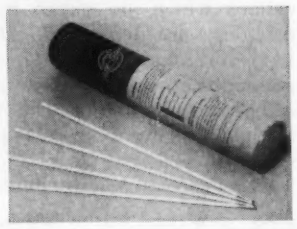
Symbol of SW Excellence

John W. Hobbs Corporation
A DIVISION OF STEWART-WARNER CORPORATION
2076 YALE BLVD., SPRINGFIELD, ILLINOIS

For more details circle NED-841 M on enclosed inquiry slip

New Processes & Materials

ALUMINUM WELDING ELECTRODE for welding sheet, plate, castings



Developing tensile strengths up to 28,000 psi, Smoothcote No. 34 electrode has an aluminum alloy 4043 core which is combined with a smooth extruded flux coating. It welds quietly with dense, spatter-free deposits at low amperages. It is suited for reverse polarity dc welding of aluminum sheet, plate, and castings. Slag removal and deposition control are simple. • **All-State Welding Alloys Co.**, 249-55 Ferris Ave., White Plains, N. Y.

For more details circle NED-842 M on enclosed inquiry slip

ALNICO MAGNET MATERIAL for core type meter, instrument use

Use of Alnico VII-S, a permanent magnet material with nonoriented energy product of 2.5 million, eliminates the problem of aligning orientation direction in core type meters and instruments. Such magnets provide a uniform gap density and a more linear and accurate scale in the meter than is possible with oriented materials. It has a high coercive force and resists demagnetization, even when subjected to high environmental heat. The hard, brittle material is cast to shape and finished by grinding. It is best suited to reasonably small magnets. Alnico VII-S is also available in an oriented condition which yields an energy product of 3.7 million. • **Indiana General Corp.**, Indiana Steel Products Div., Valparaiso, Ind.

For more details circle NED-843 M on enclosed inquiry slip

POROUS CASTING SEALER solution withstands over 1000° F

Porous, leaking, or weeping ferrous and nonferrous castings are permanently sealed by easy-to-use Mogul Cast Seal Colloidal, a copper and iron colloidal solution made in two types. Type A is used in open, nonvacuum pressure and circulating systems, whereas Type B is for vacuum pressure systems. Nontoxic, nondeteriorating, and odor-free, the solutions provide wall-to-wall sealing without baking. They withstand over 1000° F and up to 10,000 psi. Castings are washable in water after impregnation. Product also eliminates micro-bubble porosity in surfaces to be plated or painted. Drums of 5 and 55 gal are available. • **Metallizing Co. of America**, 3520 W. Carroll Ave., Chicago 24, Ill.

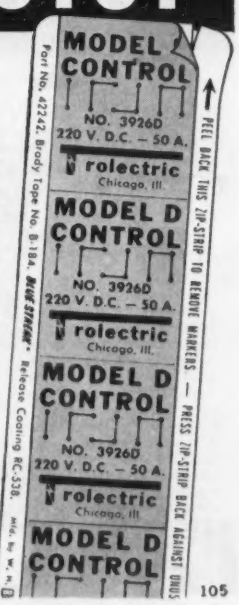
For more details circle NED-844 M on enclosed inquiry slip

WANT TO CUT COSTS?

USE BRADY *Card Mounted* **NAMEPLATES**

Brady self-bonding 5 mil aluminum foil Nameplates cost far less to buy. BIG savings in application time — *no heat, solvents, fasteners, or tools needed.* Permanent debossed-printed. Any wording, trademark, illustration. Mounted on handy Dispenser Cards—easy to inventory . . . protect plates from damage and loss.

*Write today for cost-cutting facts and samples of Brady C/M Nameplates.**



W.H. BRADY CO.
752 W. Glendale Avenue, Milwaukee 9, Wis.
Manufacturers of Quality Pressure-Sensitive Industrial Tape Products. Est. 1914
*C/M Card Mounted is a Trademark of W.H.B.Co.

For more details circle NED-845 M on enclosed inquiry slip

DETECT and CORRECT "OFF-TIMING" IN AUTOMATIC OPERATIONS

New, portable Sheffield Monitorecord® helps you achieve proper timing, and sequence of cycles in automatic machining, gaging, transfer, and assembly machines. It charts duration and relationships of up to 14 different cycles. Comparison with master chart lets you diagnose and correct trouble. Machine can pay for itself in one use. Write for bulletin AU-108.

The **SHEFFIELD** *Corporation • Dayton 1, Ohio*
A subsidiary of The Bendix Corporation

For more details circle NED-846 M on enclosed inquiry slip

How to select WORM GEAR Drives FREE TO DESIGN ENGINEERS

NEW Bulletin 218

Complete up-to-date information on Cone-Drive double-enveloping worm gear drives. Provides all specification data plus "how to select and order".

CONE-DRIVE GEARS
DIVISION MICHIGAN TOOL COMPANY
7171 E. McNichols Rd. • Detroit 12, Michigan

For more details circle NED-847 M on enclosed inquiry slip

YODER SLITTERS

Engineered for Accuracy, Speed, Easy Operation

Send today for Yoder's 76-page, fully-illustrated book, "Multiple Rotary Slitting Lines". It covers operating techniques, time studies, operating cycle analyses, coil handling, scrap disposal, and setting up of complete slitting lines. Lists advantages of slitting and how to compute "profit-point".

THE YODER COMPANY
5547 Walworth Avenue • Cleveland 2, Ohio
Please send my copy of Yoder's "Multiple Rotary Slitting Lines"

NAME _____
COMPANY _____ POSITION _____
ADDRESS _____
CITY _____ STATE _____

For more details circle NED-848 M on enclosed inquiry slip

For more details circle NED-849 M on enclosed inquiry slip

For more details circle NED-850 M on enclosed inquiry slip

For more details circle NED-851 M on enclosed inquiry slip

New Literature & Catalogs

Where to Use Thread Rolling

Landis Machine Co.—Various thread rolling applications which are served by Lanhyrol thread rolling machines are depicted in 20-page case-study Bulletin LHY-10. Adaptable to manual, semiautomatic, and automatic operations, these precision machine tools have a diametrical range of 0 to 3 in. and produce accurate threads ranging from 32 to 4½ threads per inch at speeds to 126 rpm.

For more details circle NED-852 M on enclosed inquiry slip

Designer's File on Urethane Foam

Mobay Chemical Co.—Prepared as a dual-purpose pictorial progress report and designer's fact file, 30-page guide is entitled, "The Profitable Present and the Fabulous Future of Urethane Foam." Applications ranging from simple cushioning to exotic experiments geared to the space age are discussed. Properties and possible variations of these durable foams are listed.

For more details circle NED-853 M on enclosed inquiry slip

Epoxy Floor Repair Compounds

Sika Chemical Corp.—Sika epoxy compounds can be used for bonding, patching, joint and crack sealing, surface coating of concrete, and for resurfacing of floors and pavements where corrosive action is a problem. Each of six epoxy compounds designed for a particular use in repair and new construction is described in 6-page Bulletin SEC 759.

For more details circle NED-854 M on enclosed inquiry slip

Nondestructive Testing & Research

Curtiss-Wright Corp., Princeton Div.—Instruments, products, and materials for nondestructive testing, research, quality assurance, and ultrasonic cleaning are illustrated with capsule descriptions in 6-page folder. Research furnace for heats up to 5100° F is among items covered.

For more details circle NED-855 M on enclosed inquiry slip

Seamless Welding Pipe Fittings

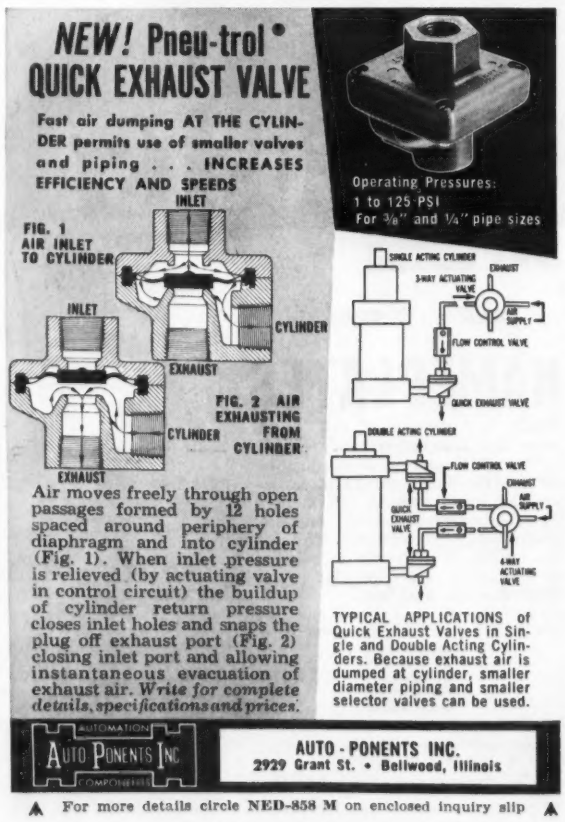
Babcock & Wilcox Co., Tubular Products Div.—Dimensions and tolerances of seamless welding pipe fittings and flanges in carbon, alloy, and stainless steels are tabulated in 8-page Bulletin FB-502A. Fittings are made for nominal pipe sizes from ⅛ to 30 in. (⅛ to 24 in. for stainless) and have precision bevel ends for easy fit-up to pipe.

For more details circle NED-856 M on enclosed inquiry slip

Planned Retooling of Power Tools

Ingersoll-Rand Co.—28-page guidebook shows how a planned annual retooling program can increase output of screw driving, grinding, nut-running, drilling, and similar production operations. Basic formulas for computing the dividend on payroll dollars are offered. Companion to this manual is a slide rule computer for rapid calculation of this gross dividend.

For more details circle NED-857 M on enclosed inquiry slip



For more details circle NED-858 M on enclosed inquiry slip

Protective Cover Fabrics

Wellington Sears Co.—"Protective Cover Fabrics" is a 16-page general guide to principal uses of cotton duck, cotton drills and tent twills, fabric finishes, coated fabrics, and fabric selection. Each is covered as to its usefulness in protecting people and property from the elements.

For more details circle NED-859 M on enclosed inquiry slip

Guide to Free 16-mm Films

Modern Talking Picture Service, Inc.—"The Pocket Guide to Free Films" describes more than 335 sound 16-mm films available free-loan to business, professional, and other interested groups. Films cover many home maintenance, industrial, and how-to-do-it subjects and run from 15 min to ½ hr in length.

For more details circle NED-860 M on enclosed inquiry slip

Industrial Hand Trucks

Harper Trucks, Inc.—Line of two-wheel industrial hand trucks reviewed in 4-page Bulletin NWSA 290 covers conventional 400 to 1000-lb capacity models for handling boxes and packages. Specials include the Drum 'N Barrel unit with drum capacities up to 1200 lb and the Wheel 'N Reel model for handling up to 40-in. diameter cable and hose reels weighing up to 1000 lb.

For more details circle NED-861 M on enclosed inquiry slip

Gluing Poster

An eye-catching 8½ x 11-in. color poster is one of a series for posting near gluing operations. It cautions workers to keep doors and windows closed to maintain stable gluing temperatures. For free poster, write on company letterhead to National Casein Co., 601 W. 80th St., Chicago 20, Ill.

For more details circle NED-862 M on enclosed inquiry slip

Self-Lubricating Wood Wear Strip

Paramount Oilless Bearing Co.—Advantages of self-lubricating wood wear strip for conveying machinery are presented in a 6-page bulletin. Typical applications are illustrated.

For more details circle NED-863 M on enclosed inquiry slip

Flexible Cushion Couplings

Dodge Mfg. Corp.—Para-flex flexible cushion couplings detailed in 20-page illustrated Bulletin 901 are for high speed, high torque applications and for attachment to flywheels of internal combustion engines. They deliver up to 47 hp per 100 rpm and, with bushings, fit shafts up to 4 in.

For more details circle NED-864 M on enclosed inquiry slip

Spring Fasteners

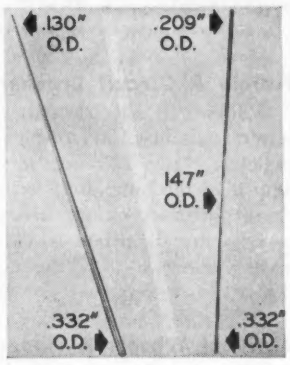
George K. Garrett Co.—Standard and special spring fasteners in twin-prong or cone type impression and push-on types are illustrated in 12-page catalog. It is arranged for easy selection of fastener by style, screw, or stud size.

For more details circle NED-865 M on enclosed inquiry slip

For more details circle NED-866 M on enclosed inquiry slip

New Processes & Materials

TAPERED TUBING
size range is 0.080 to 1.5 in. OD

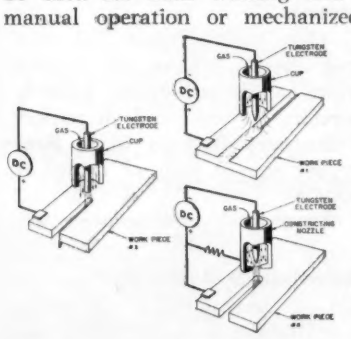


Small diameter straight and reverse tapered tubing, with either constant or tapered wall, is available in any of 120 Superior analyses that can be readily cold worked. These include carbon, alloy, and stainless steels, nickel and nickel alloys, beryllium copper, and the reactive metals such as titanium and Zircaloy. Reverse tapered tubing is supplied tapered from the middle to both ends or from the ends to the middle. Straight tapered tubing is tapered continuously from one end to the other. Both types are available in lengths up to 10 ft with a surface finish of 65 microinches or better. Size range is from 0.080 to 1.500 in. OD with wall thicknesses from 0.012 to 0.0625 in. • **Superior Tube Co.**, 1551 Germantown Avenue, Norristown, Pa.

▲ For more details circle **NED-867 M** on enclosed inquiry slip ▲

TUNGSTEN ARC CUTTING
performed with same Heliarc torch used for welding various metals

One standard Heliarc (Tig) welding torch can now be used for both welding and cutting with either manual operation or mechanized fixturing. Heliarc cutting does not constrict the arc. A tungsten electrode and an argon-hydrogen inert gas shield are used in the process which cuts by increasing the current density above that used for welding.



Any standard direct current power equipment with a 70-v circuit may be used for cutting within a 1/8 to 1/2-in. thickness range. Typical cutting speeds are 40-60 ipm on 1/8-in. aluminum and 20-40 ipm on 1/8-in. stainless steel. Good kerf quality is obtained on one side of the cut, while the other side is trimmed away as scrap. Three basic Tig processes are schematically compared in the sketches: No. 1, Heliarc welding; No. 2, Heliarc cutting; No. 3, constricted arc cutting. • **Linde Co.**, 270 Park Ave., New York 17, N. Y.

▲ For more details circle **NED-868 M** on enclosed inquiry slip ▲

Speed Packaging— Fill Direct from Original Drum!

Graco's Fast-Flo Pump speeds packaging of fluids — moves material *direct from drum* to filling operation. Accurate meter control can deliver exact amount as required. Lightweight Fast-Flo is easily changed from drum to drum without slowing assembly line. Pump uses air only when delivering fluid. Can empty full size drum in less than three minutes!

Send for more information about the amazing Graco Fast-Flo pump that's suited for large or small packaging volume. The economical Fast-Flo can transfer, agitate and dispense. Use it for a supply pump, for mixing or spraying. It handles fluids as thin as alcohol — as thick as glue. Here's the pump that can save you money!

FREE IDEA BOOK SHOWS GRACO PUMPS FOR EVERY NEED. SEND FOR IT TODAY!

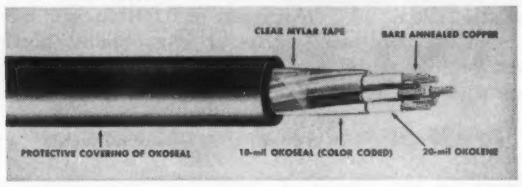
GRACO
GRAY COMPANY, INC.
127 Graco Square
Minneapolis 13, Minnesota

(See Phone Book Yellow Pages, Spraying, for Graco Suppliers)

▲ For more details circle **NED-869 M** on enclosed inquiry slip ▲

PLASTIC CONTROL CABLE
is small, light, general purpose type

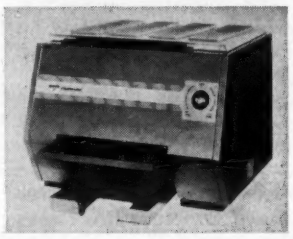
Over 30 per cent smaller and lighter than conventional rubber cable, Okonite P-30 general-purpose plastic control cable is suitable for conduit, aerial, duct, tray, or



direct burial installations in wet or dry locations. Basic conductor insulation, its protective covering, and the over-all jacket are all high quality dielectrics, providing three-fold electrical protection. Okoseal outer jacket is physically tough and chemical and flame resistant. Cable is recommended particularly for direct-current circuits in wet locations and for temperatures to 75° C. • **Okonite Co.**, 220 Passaic St., Passaic, N. J.

▲ For more details circle **NED-870 M** on enclosed inquiry slip ▲

PHOTOCOPYING MACHINE
produces five dry copies per minute



Any business paper, including those using halftones, solids, and colored material, is reproduced by the Electro-Stat desk top electrophotographic office copying machine. It makes permanent black-on-white copies of any written, printed, typed, drawn, or photographed material. Machine requires a desk space of 18 x 22 in. and plugs into a 110-v, 20-amp outlet. Five dry copies per minute are made at less than 3½ cents each. By using an offset master, up to 200 copies can be produced for as little as 1/5 cent each. Machine is available for rental at less than $40 per month or can be purchased for $1495. • **American Photocopy Equipment Co.**, 2100 W. Dempster St., Evanston, Ill.

▲ For more details circle **NED-871 M** on enclosed inquiry slip ▲

FUNGUS CONTROL
offered in polyethylene jugs

Onox fungistatic solution used in shower rooms to stop spread of athlete's foot is now offered in square-shaped 1-gal polyethylene jugs. The new container is lighter, saves space, and is shatterproof to eliminate the hazard of breakage. Fungicide is also offered in a glass fiber and polyethylene foot sprayer as well as the familiar sponge rubber footmat dispenser. • **Onox, Inc.**, Dept. B-2, 121 Second St., San Francisco 5, Calif.

▲ For more details circle **NED-872 M** on enclosed inquiry slip ▲

NEW GAT B-Beam Clip

Recently announced by Erico Products, Inc. is the new "B" beam clip. Designed for and approved for telephone use to replace present universal Clamps and/or Support Brackets. This product has found additional markets in the electrical contracting field, sound and intercommunication industries.

For use with threaded or unthreaded Bridle Rings, Drive Rings and other low voltage Cable, Wire and Copper Thermostatic Tubing Supports.

Recommended Maximum Load Limits:
Horizontal Pull 30 lbs. Vertical Pull 50 lbs.

This clip will fit any flange from 1/8" thru 1/2" thickness regardless of flange taper.

▲ For more details circle **NED-873 M** on enclosed inquiry slip ▲

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NEW!

Plastic-impregnated Cromac® gloves by Jomac that give unique 5-point glove performance

FREE SAMPLE PAIR will convince you . . . Cromac gloves by Jomac are all we say they are and more. Write Department G, Jomac Inc., Philadelphia 38, Pa.

JOMAC

"Jomac Sells Quality . . . and Quality Sells Jomac!"

▲ For more details circle **NED-875 M** on enclosed inquiry slip ▲

1 man handles Sheet Steel Faster, Easier with a C-F LIFTER

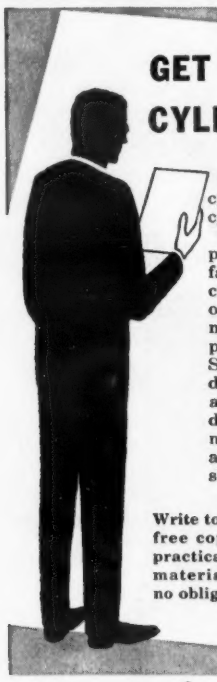
C-F Lifters, under one man operation, pick up, carry and unload more sheet steel tonnage per hour than any other method – and at lower cost per ton. Wide carrying angles hold sheets securely – won't damage high grade sheets; tong action insures safe carrying; fast opening and closing adjustments of Lifter jaws permit shifting from one size pack to another in seconds. C-F Lifters are made in standard or semi-special models to handle from 2 to 60 tons.

Write for Bulletin SL-30 for specific examples of C-F Lifter operation and economy.

CULLEN-FRIESTEDT CO.
1304 South Kilbourn Avenue • Chicago 23, Illinois

▲ For more details circle NED-879 M on enclosed inquiry slip ▲

GET YOUR HYDRAULIC CYLINDER FACTS NOW



■ Hannifin simplifies hydraulic cylinder selection by tailoring your cylinder to your circuit.

For 2,000 psi systems (3,000 psi non-shock) we offer our famous heavy-duty Series "H" cylinders. For circuits operated off 1,000 psi pumps, there's the new Series "L", the "thousand-pound" line, and the "universal" Series "U". Get our complete dimensional data and prices on all three lines of Hannifin hydraulic cylinders. New price sheets make it easy to figure your costs and tell you when you can expect shipment.

Write today for your free copies of this practical reference material. There is no obligation.

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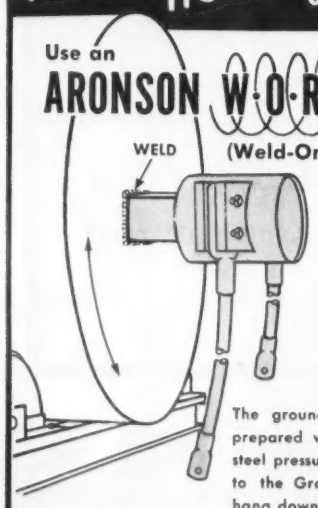
HANNIFIN COMPANY
A DIVISION
527 South Wolf Road • Des Plaines, Illinois
PNEUMATIC AND HYDRAULIC SYSTEM COMPONENTS

3191-PH

▲ For more details circle NED-880 M on enclosed inquiry slip ▲

Having Trouble Grounding Vessels on Turning Rolls?

Use an ARONSON W·O·R·M GROUND (Weld-On-Rotating Mercury)



There is only one good way to conduct ground current from a vessel on turning rolls and that is to make a good connection of the ground cable directly to the vessel.

The ground cable(s) have the end prepared with a copper sleeve and steel pressure plate which is secured to the Ground Blocks. The cable(s) hang down making a pendulum which assures the housing staying stationary while the stud member rotates with the vessel. Extremely rugged and perfectly engineered to conduct 1100 amps continuous-duty, full-flow current, steady and unwavering.

ARONSON MACHINE CO., INC.
ARCADE, NEW YORK

▲ For more details circle NED-881 M on enclosed inquiry slip ▲

New Literature & Catalogs

Feed Tables & Machine Beds

Master Mfg. Co.—Feed tables and machine beds are subject of 26-page machine tool Catalog 260. Tables have straightness and squareness of 0.001 in. per foot. Units with plain and universal cross slides, power drives for feed tables, erector-type beds, and feed table accessories are reviewed with complete dimensional data.

▲ For more details circle NED-882 M on enclosed inquiry slip ▲

Tool Steels

Twenty-four varieties of tool steel, including several new types, are described in plastic-bound catalog of 144 pages. Composition, properties, and applications are given for each, along with heat treatment data. An index type selection table is included. Also described are tool steel specialties. Request on company letterhead from Darwin & Milner, Inc., 2222 Lakeside Ave., Cleveland 14, Ohio.

▲ For more details circle NED-883 M on enclosed inquiry slip ▲

Automated Heat Processing Equipment

Selas Corp. of America—Machines for heat treating, selective hardening, brazing and soldering, annealing, and other metal heating processes are described in 16-page Bulletin S-1058, "Selas Automated Equipment." A number of typical applications are covered.

▲ For more details circle NED-884 M on enclosed inquiry slip ▲

Durable Industrial Tires

Industrial Tire & Rubber Co.—Reported to out-wear pneumatic tires by 3 to 1, Intrico Puncture Proof tires for mobile and industrial equipment are available in sizes from 4:00 x 4 to 10:00 x 24. They are made up of amalgamated pads of fabric and rubber, compressed under hydraulic pressure, and fastened with an internal steel band. Complete data are given in file folder.

▲ For more details circle NED-885 M on enclosed inquiry slip ▲

Plastic Bearing Material

Bunting Brass & Bronze Co.—Catalog 32 describes Cadco nylon, a wear resistant, nonseizing material for bearings and related applications. Solid rods, extruded tubes, tubular bars, pressure tubing, and plate are covered.

▲ For more details circle NED-886 M on enclosed inquiry slip ▲

Microstoning Machines & Attachments

Taft-Peirce Mfg. Co.—Microstoning is a precision finishing process in which special abrading or polishing stones are oscillated against moving work pieces to generate controlled microinch finishes while correcting out-of-roundness and removing surface imperfections left by prior machining. West-German developed Supfina attachments make the process adaptable to lathes, milling machines, grinders, planers, or boring machines. Full data are given in 16-page Catalog 319.

▲ For more details circle NED-887 M on enclosed inquiry slip ▲

ENGINEERED PLASTICS

New development in Teflon* FEP parts by Garlock. With the commercial availability of melt-processible Teflon FEP, Garlock can fabricate mechanical and electrical components never before possible. Teflon FEP opens new avenues of design possibilities . . . parts of the most intricate shapes . . . wall sections of minimum thinness of .020"-.030" . . . pieces with the closest of tolerances. For more information on stock shapes and intricate parts of Teflon FEP, contact one of Garlock's 26 sales offices and warehouses throughout the U. S. and Canada, or write for Plastic Catalog, Garlock Inc., Palmyra, New York.

GARLOCK

Canadian Division: Garlock of Canada Ltd.

Plastics Division: United States Gasket Company

Order from the Garlock 2,000 . . . two thousand different styles of Packings, Gaskets, Seals, Molded and Extruded Rubber, Plastic Products

*Du Pont Trademark

▲ For more details circle NED-888 M on enclosed inquiry slip ▲

Centrifugal Casting Data

Shenango Furnace Co., Centrifugally Cast Products Div.—Engineering properties of Meehanite metal, Ni-Resist iron, Ni-Resist ductile iron, and ductile iron are charted in 8-page Bulletin 158 on centrifugal casting. It also shows component parts and assemblies produced by the centrifugal method.

▲ For more details circle NED-889 M on enclosed inquiry slip ▲

Fusible & Circuit Breaker Devices

Wadsworth Electric Mfg. Co.—Thirty to 1200-amp safety switches, 30 to 600-amp general duty safety switches, 30 to 200-amp service equipment, 30 to 200-amp distribution panels with 2 to 40 circuits, E-Z-Red circuit breaker, circuit breaker enclosures, and wiring troughs are described in catalog of fusible and circuit breaker devices.

▲ For more details circle NED-890 M on enclosed inquiry slip ▲

Diamond Wheels & Hones

O'Rourke Diamond Co.—Resinoid bonded wheels with natural or man-made diamonds for smooth finishing and special metal bonded wheels for electrolytic grinding are subject of 16-page catalog. Latter type is available with diamond or nondiamond abrasive. Various grits offered have 16 to 325 mesh.

▲ For more details circle NED-891 M on enclosed inquiry slip ▲

Clamps, Brackets & Supports

TA Mfg. Co.—76-page illustrated engineering design Bulletin 212G covers an extensive line of clamps, brackets, shims, and line supports for many applications, including mounting of tubing, wiring, and similar hardware. Clamps are made in various shapes and sizes, cushioned or noncushioned.

▲ For more details circle NED-892 M on enclosed inquiry slip ▲

Electric Heating Elements

Acra Electric Corp.—How various types and sizes of Acrawatt Thin Band electric heaters are applied to such circular containers as dryers, bucket heaters, cylindrical ovens, laboratory devices, and dispensers is detailed in 4-page illustrated Bulletin BHA. Suggested wattage density per square inch of heater is given for various applications.

▲ For more details circle NED-893 M on enclosed inquiry slip ▲

Power Tools for Production & Assembly

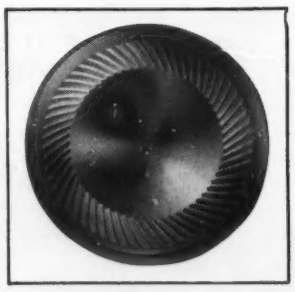
Wilton Tool Mfg. Co.—16-page Catalog 724 is descriptive of PowRlock hydraulic clamping head, air-hydraulic boosters, power tool accessories, MilOmatic air-hydraulic power vises, WiltOmatic vises, air cylinders, and power tool replacement parts.

▲ For more details circle NED-894 M on enclosed inquiry slip ▲

Guide to Welding Stainless

McKay Co.—Handy chart combined with 6-page welding guide gives chemical and physical specifications of McKay stainless steel welding electrodes. Case histories amplify the practical information which also suggests procedures.

▲ For more details circle NED-895 M on enclosed inquiry slip ▲



5 Times As Vibration-Resistant As Any Other Socket Set Screw—UNBRAKO!

- Tests by SPS Laboratories for Advanced Research show knurled-cup UNBRAKO fully 5 times as vibration-resistant as closest competitor—*with equal torquing!*
- *And*—you can tighten an UNBRAKO High Torque up to 40% tighter than ordinary set screws because of its deeper socket, radiused socket corners, fully formed threads.
- Bite provided by exclusive knurled cup point makes UNBRAKO High Torque literally self-locking.

Demand proven reliability. Specify UNBRAKO High Torque socket set screws.* Sizes #0-1 in., alloy or stainless, and with Nylok.† See your SPS distributor or write for Bulletin 2067.

*Standard . . . They sell at regular price
†T.M. Reg. U.S. Pat. Off., The Nylok Corporation

INDUSTRIAL FASTENER Division SPS

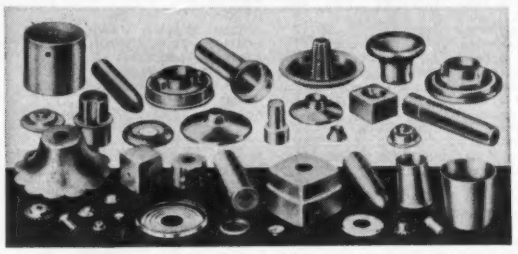
JENKINTOWN 24, PENNSYLVANIA

▲ For more details circle NED-896 M on enclosed inquiry slip ▲

New Processes & Materials

SMALL DEEP DRAWN PARTS
6 in. diameter blank drawn 3¼ in.

Parts shown in picture are all made from metal strip which is blanked in diameters up to 6 in. and drawn to depths of up to 3¼ in. New multiple-stage eyelet



and transfer production equipment to make these shells, eyelets, stampings, and similar parts have been added to this company's facilities. Production starts as metal strip in hundreds of different alloys, widths, and thicknesses, and ranges from simple designs through parts with complex forms requiring close tolerances. • **Cly-Del Mfg. Co.**, Sharon Road, Waterbury, Conn.

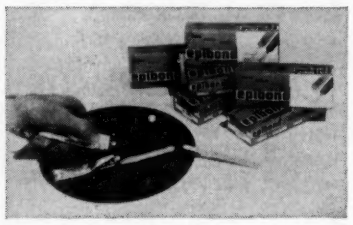
▲ For more details circle **NED-897 M** on enclosed inquiry slip ▲

REGALVANIZING COATING
for buildings, fences, equipment

Applied by brush, spray, or roller over weathered galvanized metal surfaces, Carbo Zinc 11 gives the same galvanic protection as the original coating. A 2½-mil thick coat becomes water insoluble 20 min after application so that it is unaffected by rain or condensation. Under Weatherometer tests, Carbo Zinc 11 coated steel panels showed no rusting after 5500 hr, equivalent to 13 years of field service. • **Carboline Co.**, 32 Hanley Industrial Court, St. Louis 17, Mo.

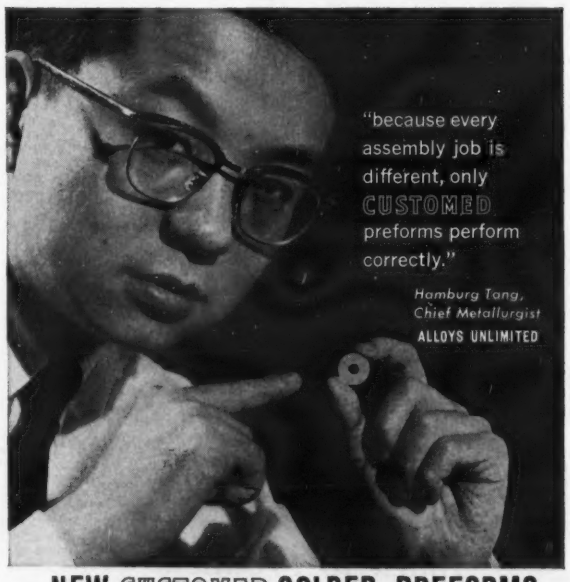
▲ For more details circle **NED-898 M** on enclosed inquiry slip ▲

TWO-PART ADHESIVE
epoxy type offered in tube kit



Epibond H-1331 two-component multipurpose adhesive is now available in tube kits for easier use in repairing anything from engine blocks to metal furniture. Adhesive and hardener are measured in equal strips or lengths, mixed with a spatula, and applied. It sets in 30 to 40 min to a hard, gap-filling adhesive with good bond strength and will resist most chemicals. Mechanical reliability is high. Twelve kits sell for $19.08. • **Furane Plastics Inc.**, 4516 Brazil St., Los Angeles 39, Calif.

▲ For more details circle **NED-899 M** on enclosed inquiry slip ▲



NEW CUSTOMED SOLDER PREFORMS IMPROVE AUTOMATIC SOLDERING

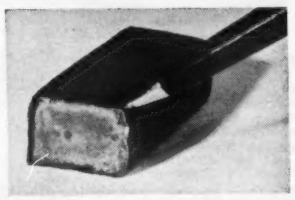
New customed preforms consist of an accurately predetermined amount of a specific alloy. The proper melting temperature and correct volume of solder are assured. Labor costs are lowered. Production increases. Scrap is eliminated. Get the facts today! Write for 8 page Guide to Preform Soldering.

21-01 43rd Ave., Long Island City 1, N. Y.

ALLOYS UNLIMITED INC

▲ For more details circle **NED-900 M** on enclosed inquiry slip ▲

STEEL CORROSIONPROOFING
process applies chromium to surface



Resistance of carbon steel to heat, corrosion, and wear is increased through use of the Aliphatizing process which gives it many of the properties of stainless steel. An adequate and controllable amount of chromium applied to the metal surface becomes an integral part of the metal. No pinholes are formed, and the bottom of threads and small surface imperfections are penetrated and treated. Mild and low carbon steel show the greatest chromium penetration. Aliphatizing applications include minute fasteners, jet engine vanes, truck mufflers, strip heater casings, relay parts, and can seamer rolls. Conventional heat treating furnaces are used for the process, which is licensed for use by commercial heat treaters. • **Alloy Surfaces Co.**, Wilmington, Del.

▲ For more details circle **NED-901 M** on enclosed inquiry slip ▲

STAMPING INK
for use on epoxy plastic or metals

Resistance to cleaning and solvents such as acetone, alcohol, and mineral oils is claimed for this marking ink which dries to the touch in 1 min. Formulated for use on epoxy plastic and rigid metals, it is made in black, yellow, and red colors, plus specials. Sample disc with specimen imprint will be furnished to test the ink's resistance to solvents. • **Easy Mark Ink Co.**, Crosby & Butler Avenue, Lowell, Mass.

▲ For more details circle **NED-902 M** on enclosed inquiry slip ▲

CURTAIN WALL PANELS
insulating type is translucent

Glass fiber reinforced skins with an air insulating core comprise Condolux prefabricated insulating curtain wall panels. Designed for use with Condo-wall metal insulating curtain wall panels, the translucent panels are available in 2, 3, and 4-in. thicknesses in a standard 32-in. width and 4 to 12-ft lengths. Fluted ribs on exterior skins are on 4½-in. centers. Interior ribs are V-type, spaced to match exterior ribs. Insulation U-factors range from 0.19 to 0.26. Glass fiber boards of 10½-lb density are used as structural shear members between the skins. A 3-in. thick panel weighs 2.7 lb per square foot. Panels are adaptable to all types of building framing, and are available in a variety of colors. Minimum in-place cost is $2.75 per square foot. • **Dresser-Ideco Co.**, 875 Michigan Ave., Columbus 15, Ohio.

▲ For more details circle **NED-903 M** on enclosed inquiry slip ▲

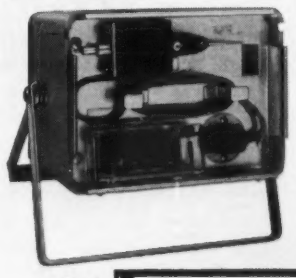
electro-probe

Low Cost, Portable Electronic Gaging Unit

NEW!

Now more compact, more versatile, easier to use. Many new features.

- Feather-light touch
- New contact tip design
- Fast zero-setting



- Battery life quadrupled
- Improved meter visibility
- Completely self-contained

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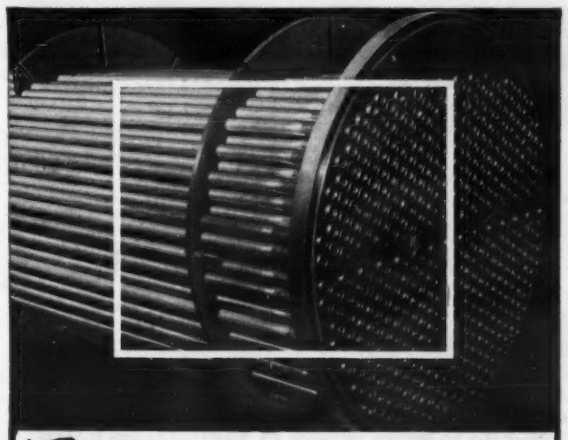

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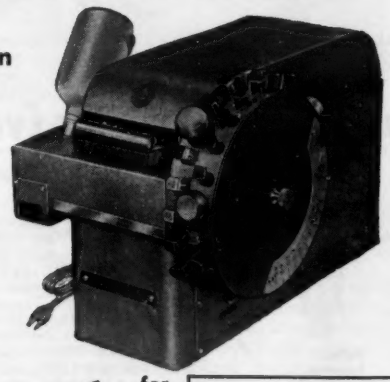

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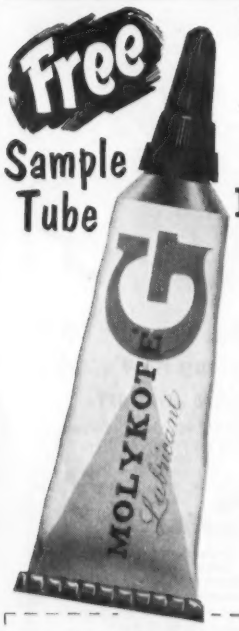

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27 capacitors using semiconductors can be read at 1000-ft distance

Cranes and hoists, industrial trucks, electronic scales, and structural stress meters are applications for this remote indicating load cell system. Direct and instantaneous readings of forces are made at distances up to 1000 ft from the load cell. The differential transformer type, temperature compensated unit utilizes semiconductors.

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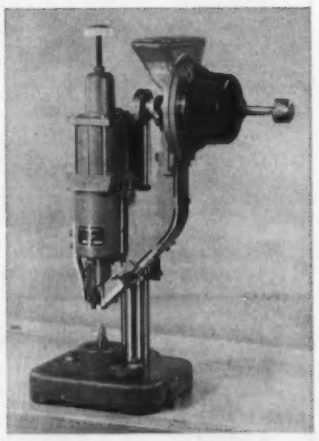
AUTOMATIC RIVETER

sets tubular rivets, other fasteners



Safety is assured by the design of the Model SMR Electrorivet hopper fed riveter. The operator cannot get his fingers in the way while it is automatically feeding and setting up to 60 rivets per minute. The bench type electric machine drives up to ⅛-in. diameter tubular rivets and other small fasteners. Degree of clinch is controlled by a Variac variable transformer which permits impact settings from a feather-light tap to a maximum of 3500 lb. Riveter throat is 4 in. and stroke is 1⅛ in. • **Black & Webster, Inc.,** 570 Pleasant St., Watertown 72, Mass.

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America's Pioneer Manufacturer of Rubber Bonded Abrasives

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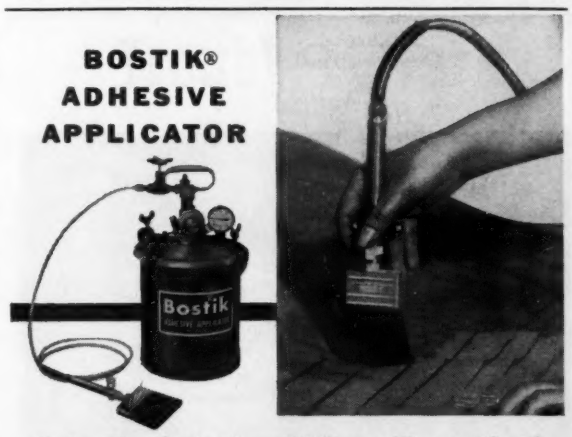

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- *slashes costs, increases production*

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Bostik® ADHESIVES
BB Chemical Co., 784 Memorial Drive, Cambridge, Massachusetts
Subsidiary of United Shoe Machinery Corporation USC-114

▲ For more details circle **NED-914 M** on enclosed inquiry slip ▲

REED 1-3-4 WHEEL PIPE CUTTERS

Wide Hub
Razor Blade Wheels

The Reed Pipe Cutters in this series are the easiest-to-use and the cleanest cutting tools in their size range. In the roller model, the single wheel is in the sliding block where it is always in full sight with the cut-off mark. The 4-wheel model is excellent for close-quarter work since it operates with an easy ratchet-like action through a quarter revolution. Reed Razor Blade Wheels cut easily, track perfectly, and leave minimum burr. Available in three size ranges: ⅛″ to 1¼″, ⅛″ to 2″ and 1″ to 3″.

At better jobbers, or write for circular

REED MANUFACTURING COMPANY
ERIE, PENNSYLVANIA

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Pat. Pending

yellow blade clad in miracle MYLAR*

*DuPont trademark for its polyester film

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- Acid-proof, wear-resistant!

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Div. of The Stanley Works
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For more details circle NED-916 M on enclosed inquiry slip

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★ 9-in-10 washers are fastened with TOO LONG or SHORT SCREWS thus loosen and destroy themselves. Leaks quickly follow!

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★ New, patented 'Sexauer' SELF-LOCK screws have imbedded expanding NYLON PLUG. They lock at required depth AUTOMATICALLY, hold washers firmly! Made of MONEL, they are rustproof, non-corroding. Heads can't twist off. Screw slots can't distort.

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For more details circle NED-917 M on enclosed inquiry slip

New Literature & Catalogs

Cogged Belt Drives

Maurey Mfg. Corp.—Detailed selection information in 48-page Catalog PD-1 is in the form of drive tables and horsepower ratings for each pitch available in Positive cogged belt drives. Pitches are 1/5, 3/8, 1/2, 7/8, and 1 1/4 in. Grooved pulleys and thin steel cable belts with cogged undersides are features of the drives, made in a fractional to 600-hp range.

For more details circle NED-918 M on enclosed inquiry slip

Punches & Dies

Producto Machine Co., Ring Punch & Die Div.—Expanded line includes regular, medium, and long lengths in Ring and head type punches, press fit and head type stripper bushings, and quill punches in three sizes. These products are described in detail in a 48-page catalog and prices are contained in an 8-page supplement.

For more details circle NED-919 M on enclosed inquiry slip

Tape Control & Data Processing

Friden, Inc.—"Friden IDP Products in Action" is title of 28-page manual on more than a dozen major data processing systems which are controlled automatically by Friden puched-tape business machines. Pictures and concise explanations are given on such diversified uses as letter writing, purchasing, manufacturing control, and data collection.

For more details circle NED-920 M on enclosed inquiry slip

Parts for Jigs & Fixtures

Northwestern Tools, Inc.—Included in 16-page Catalog 31 are full scale tracing templates of complete line of jig and fixture components as well as clamping devices. Stock toggle shoe clamps, knobs, pads and feet, screws, keys, latch bolts, nuts and washers, step blocks, T-nut and stud sets, and many other items are described.

For more details circle NED-921 M on enclosed inquiry slip

30 Automatic Lathes

Jones & Lamson Machine Co.—Starting with a 60 or 180-degree Auto-Tracer or the J & L Multiple Slide Automatic lathe as the basic machine, a wide variety of drives, slides, tracing units, and machine variations can be adapted to specific production machining needs. Illustrated file jacket includes bulletins containing 40 pages of design, performance, and other information.

For more details circle NED-922 M on enclosed inquiry slip

Slide Rule Type Speed Reducer Selector

Foote Bros. Gear & Machine Corp.—Free shirt-pocket slide rule type "Quick-Selector" is a guide to correct choice and application of fan-cooled worm gear speed reducers. A simple setting of the slide discloses the proper model Radicon reducer for any desired input speed, ratio, output speed, and capacity as well as 20 key dimensions of the recommended unit.

For more details circle NED-923 M on enclosed inquiry slip

Available in Stainless Steel, Brass, Aluminum and Steel

JACOBSON NUT MFG. CORP. Kenilworth, New Jersey

For more details circle NED-924 M on enclosed inquiry slip

Engineering Flexible Couplings

Ajax Flexible Coupling Co.—Engineering, application, design, and other data on dihedral spindle and gear type flexible couplings with bores up to 7 3/4 in. and ratings to 1100 h_c at 100 rpm are presented in tables and sketches in 12-page Catalog 70. A 2-page question, answer, and sketch sheet facilitates outlining individual requirements for submission to company's engineering department.

For more details circle NED-925 M on enclosed inquiry slip

Spring-Tooth Lock Washers

Illinois Tool Works, Shakeproof Div.—"This Washer Locks" is an 8-page manual on the use of Shakeproof lock washers in varied applications. Features and advantages of these spring-tooth lock washers are explained with schematic drawings, charts, and pictures.

For more details circle NED-926 M on enclosed inquiry slip

Teflon-Lined Rod Ends & Spherical Bearings

Heim Co.—Teflon lining used in Unibal spherical bearings and rod ends assures low friction, resists chemical attack, and acts as a cushion to withstand impact and vibration. Aluminum bronze, porous bronze, porous iron, and stainless steel constructions are available with bores up to 1 in. Complete details are given in 6-page bulletin.

For more details circle NED-927 M on enclosed inquiry slip

Nylon & Dacron Slings

Jones & Laughlin Steel Corp., Wire Rope Div.—6-page color-illustrated Bulletin AD-605 shows how and where to use Safety-Weave nylon and Dacron slings. These woven slings withstand most chemicals and corrosive elements, protect highly finished surfaces, and are offered in various sizes in vertical, choker, and basket types.

For more details circle NED-928 M on enclosed inquiry slip

Filling Containers With Liquids

National Instrument Co.—24-page catalog "Filmatic Electronically Controlled Portable Liquid Fillers" details types offered for use on packaging equipment for handling liquids ranging from drugs and cosmetics to adhesives or corrosive chemicals.

For more details circle NED-929 M on enclosed inquiry slip

Speed Reducers

Insco Co.—Step-function Speed Reductor for use in any instrument, prototype, test set-up to drive charts, oscillators, and potentiometers provides ten separate ratios from 1:1 to 1000:1. Its features are covered and seven case studies are presented in loose-leaf file folder.

For more details circle NED-930 M on enclosed inquiry slip

Belts for Every Need

American Biltrite Rubber Co., Boston Woven Hose & Rubber Div.—36-page catalog lists weights, gages, fabrics, recommended uses, and related data to aid in the selection of the correct conveyor, elevator, or power transmission belt for any application.

For more details circle NED-931 M on enclosed inquiry slip

Tougher... Lighter... Smaller

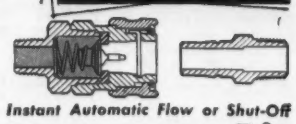
handles more air with minimum pressure drop

Has fewer parts. Locking ring provides positive lock... tight fit... minimum wear. Equipped with automatic sleeve lock.

Handles any job in your shop using 3/4" to 1/8" connections—from the air line to the air tool—eliminates any need for various size couplings in hook-up—makes it easy to keep stock of parts in balance—holds inventories to a minimum.

All Series 2-RL Sockets and Plugs are completely interchangeable—likewise all larger Series 3-RL Sockets and Plugs.

HANSEN SERIES RL QUICK-CONNECTIVE RING LOCK COUPLING



Write for Catalog — a ready reference when you want information on couplings in a hurry.

Instant Automatic Flow or Shut-Off

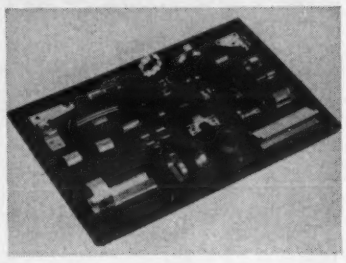
Representatives in Principal Cities ... See Yellow Pages

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 35, OHIO

For more details circle NED-932 M on enclosed inquiry slip

New Processes & Materials

SHORT RUN STAMPINGS
combined tooling method cuts costs



Production cost savings run as high as 25 to 50 per cent over conventional methods in Combin-O-Tool short - run stamping of small parts. Method enables combining several steps in the making of a complex stamping, or even the entire part, on one machine. It is most practical when limited to smaller parts and runs of 500 to 1000 pieces or more. Key to time and labor reductions is the elimination of many single-stage steps in handling each part. • **Federal Tool & Mfg. Co.**, 3608 Alabama Ave., Minneapolis 16, Minn.

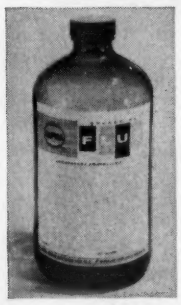
▲ For more details circle **NED-933 M** on enclosed inquiry slip ▲

PERMANENT INTERIOR FINISH
dries to tile-like gloss

Epo Liquid Regular Coating, a pure epoxy resin interior finish for walls, ceilings, and structural metals, cures to a smooth, tile-like gloss which will not wear, fade, flake, or chip under repeated washing. Applied by brush, roller, or spray, it is available in most decorator colors and adheres permanently to wood, plaster, brick, concrete, block, drywall, or metal. Finish is highly resistant to chemicals, abrasives, soaps, and detergents, and is nontoxic. It will help maintain high sanitary standards in food processing and chemical plants. • **George E. Fines, Inc.**, 18640 Wyoming Ave., Detroit 21, Mich.

▲ For more details circle **NED-934 M** on enclosed inquiry slip ▲

LIQUID ROSIN FLUX
for printed circuit dip soldering



Metal surfaces normally resistant to fluxing can be soldered with Alpha 346-35 liquid rosin flux, developed for printed circuit dip soldering. It has good wetting action and capillarity and leaves a noncorrosive insulating residue. Flux is applied by brush, dip, or spray to various metals, including brass, bronze, cadmium plate, copper, lead-nickel plate, silver terne plate, hot-dipped tin, electrolytic tin plate, and tin-zinc plate. Flash point is 78° F and boiling point is 177° F. Residue can be removed with Alpha 563 rosin flux remover. • **Alpha Metals, Inc.**, 56 Water St., Jersey City 4, N. J.

▲ For more details circle **NED-935 M** on enclosed inquiry slip ▲

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MODEL EMT-2

A NEW ERA IN NAME PLATE MARKING

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1920 S. VANDEVENTER Dept. QD ST. LOUIS 10, MO.

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REINFORCED GUMMED TAPE
makes carton opening easy

Damage to contents of corrugated cartons by opening tools is prevented with the use of Stres-Pruf E. O. reinforced gummed tape. It has a glass fiber reinforced top layer which is easily ripped off, leaving only a thin kraft layer that is easily broken to open the carton. The non-asphaltic tape meets all Rule 41 requirements for two-strip carton closure and saves considerable time for those opening packages in quantity. It also permits carton reuse, reclosing, and retaping. • **Minnesota Mining & Mfg. Co.**, Mid-States Gummed Paper Div., 6850 S. Harlem Ave., Bedford Park, Ill.

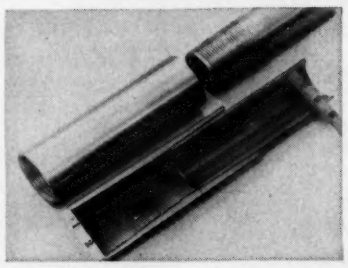
▲ For more details circle **NED-937 M** on enclosed inquiry slip ▲

EPOXY STRIPPER
salvages encapsulated, coated parts

Embedded, encapsulated, and coated parts and components can be salvaged with Epoxy Stripper, a strong general solvent that dissolves cured epoxy and other resins and plastics. It also strips paints and other coatings, is corrosion inhibitive, and is nonflammable. Variations can be specially formulated free upon request. Solvent is offered in a freight-free, nonreturnable 55-gal drum at $4.95 per gal, as well as smaller quantities for $6.95 per gal, FOB Detroit. • **Grodan Mfg. & Sales, Inc.**, 10807 Lyndon, Detroit 38, Mich.

▲ For more details circle **NED-938 M** on enclosed inquiry slip ▲

BUTTRESS THREAD TUBING
stabbed together without damage



Plain end, nonupset tubing with buttress threads can be joined to mating couplings up to 12 times without thread damage. Tube and fitting are stabbed together by normal drop impact. Designed for use in oil wells, the tubing is easily handled and threaded in the field. Joint strength is reported to be about 98 per cent of body strength. Coupling threads are tin plated to make the joint leakproof, to withstand pressures up to 15,000 psi, and to minimize make-up torque and tonging. Threads have a 0-degree pulling face and a 45-degree flank angle on the compression side with broad, flat roots and crests parallel to the major axis of the pipe. Buttress thread tubing is available in J, N, and P Grades in 2⅜ and 2⅞-in. OD sizes. Other sizes will be available. • **United States Steel Corp.**, National Tube Div., 525 William Penn Place, Pittsburgh 30, Pa.

▲ For more details circle **NED-939 M** on enclosed inquiry slip ▲

COMPLETE LINE OF FORGED STEEL
PARKERIZED FITTINGS
• Carbon and Alloy • Screwed and Socket Weld

Now available! A complete line of Parkerized Fittings from the same reliable source that has supplied you with high-pressure Unions and Valves since 1912. Corrosion-resistant in stock or on the job, these clean-looking fittings are available in sizes from ⅛" to 4". Pressure ratings are 2000, 3000, 4000 and 6000 psi. Order from your local Clayton Mark Distributor today!

CLAYTON MARK AND COMPANY
1900 DEMPSTER STREET - EVANSTON, ILLINOIS - U.S.A.

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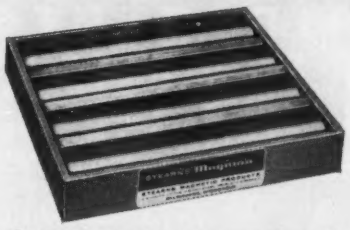
FAIL-PROOF PROTECTION AGAINST TRAMP IRON
with STEARNS INDOX permanent grate magnets



Job-proved in hundreds of process industries

Can be installed in any hopper or floor opening, chute or duct. Delivers up to 40 percent more protective surface than ordinary grate magnets.

Available in standard rectangular sizes ranging from 3x6 inches to 35x36 inches in both wing and drawer types — single or double bank. Inquire about circular or irregular shapes.

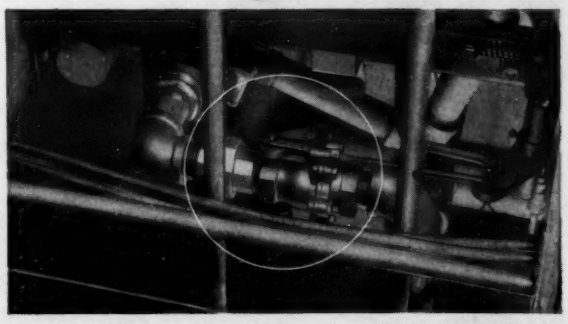
Call your local Stearns representative, or write for Bulletin 1072L.

STEARNS MAGNETIC PRODUCTS
DIVISION OF INDIANA GENERAL CORPORATION
635 South 28th Street • Milwaukee 46, Wisconsin

Profit with Stearns—First with Ceramic Magnet Separators for Industry

▲ For more details circle **NED-941 M** on enclosed inquiry slip ▲

Trouble Saver in a Big Washer



The big *Straightaway* Can washers built by the R. G. Wright Co., Inc., Buffalo, N. Y., are equipped with Rockwood Ball Valves, for washing with a detergent solution and rinsing — at temperatures of 135°F. to 180°F. Rockwood advantages for this and the widest range of other processing operations include: *full round flow . . . leakproof seal . . . opening and closing with ¼" turn . . . extra long wear-resistance.*

Equipment manufacturers and processing plants depend on Rockwood Ball Valves — of bronze or steel — for simplifying operation and maintenance. Available in all pipe sizes. Tested and listed by Underwriters' Laboratories, Inc.

ROCKWOOD SPRINKLER COMPANY
A Division of The Gamewell Company • Subsidiary of E. W. Bliss Company
886 Harlow Street, Worcester 5, Mass.

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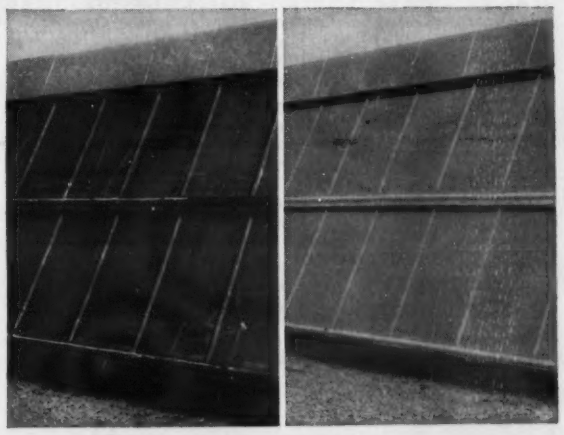
BEFORE AFTER



Replace cracked glass
with Structoglas

Don't put up with cracked glass. Put up *shatterproof* Structoglas fiberglass panes—*end breakage for good.* Tinted Structoglas lets in free natural light without glare. No painting needed; resists fading and erosion. Easy to install with ordinary glazing methods. Glaze once and for all with Structoglas.

Write for detailed literature

structoglas®

Structoglas Inc., Dept. 1206, Cleveland 20, Ohio 5906

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NEW Stearns electro-magnetic miniature CLUTCHES

STYLE SMR—STATIONARY MAGNET... BALL BEARING-MOUNTED HUB for fast, easy installation — No alignment problems.

7 SIZES

TORQUE RANGE from 8 to 540 lb in.

DIAMETERS from 1⅜ to 4⅝ inches

• Prompt Delivery — fully assembled — tested.

• Installation-Proved Long Life.

• Competitively Priced.

• Also Available With Integral Sprocket or Sheave.

• *Request Bulletin No. 504-F for complete data.*

Stearns ELECTRIC CORPORATION 120 North Broadway MILWAUKEE 2, WISCONSIN Phone: BRoadway 2-1100

The COMPLETE LINE of CLUTCHES . . . BRAKES . . . CLUTCH-BRAKES

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NEW SOLDER FOR DIFFICULT JOBS

Difficult soldering jobs become easy when you use this new, finely powdered solder called FAS-TIN. Each particle of solder is surrounded by a powerful scavenger flux which wets through dirt, rust and grease. Tinning action is completed at the exact moment the surface oxides are suspended. It goes on like butter.

Copper pipe and sweat fittings can be worked without pre-cleaning. Bearings impregnated with oil can be tinned. Stainless steel sinks and drains can be soldered. Dissimilar metals may be joined—monel to stainless; brass, bronze to cast iron; or copper to steel. Any combination except aluminum may be joined.

FAS-TIN is also stable. It will not cake or lump when exposed to atmosphere. The metal stays in suspension; no stirring necessary. There is no deterioration and no free mineral acid to cause corrosion. Inexpensive coverage: 25 square feet per pound.

FAS-TIN is packed in 2 lb. cans at $4.30 f.o.b. Philadelphia, Pa. less 10% in 6 can lots.

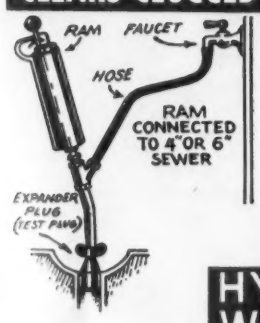
Have you tried #1 Acid Brushes, 25% more hair, $3.60 per gross fob Phila. *Advt.*

FARRELLOY COMPANY

1246 North 26th St. Philadelphia 21, Pa.

▲ For more details circle NED-945 M on enclosed inquiry slip ▲

CLEARS CLOGGED DRAINS in Seconds!



The ideal plumbing service tool. Can pay for itself in one application!

Smashes through the most stubborn blockages, then flushes clean — all in one operation!

Comes equipped with self-contained manual compressor (can charge Ram to 100 lbs. in 30 seconds!) and drain adaptors in 6 sizes!

HYDRAULIC WATER RAM

Anyone can operate it! Thousands already in use, have saved *millions* of dollars in industry and institutions. Why lose time, suffer inconvenience, waste dollars needlessly on either completely blocked or slow-moving sewers, drains, fixtures? The HYDRAULIC WATER RAM clears severest stoppages with SPLIT-SECOND HYDROSTATIC IMPACT! . . . Shatters blockage, then flushes clean. No snakes, chemicals, cables. No pushing through. Works perfectly, vent or no vent! Nothing to wear out. You risk nothing on our 30 day free trial offer, at our expense. Write for details.

Works perfectly with all clogged fixtures, toilets, sinks, urinals, etc. Equipped with 4" rubber cone, ideal for toilets, *plus* set of 5 tapered adaptor plugs for other drains or sewers.

Write for Information, Prices, Free Trial Offer — Today!

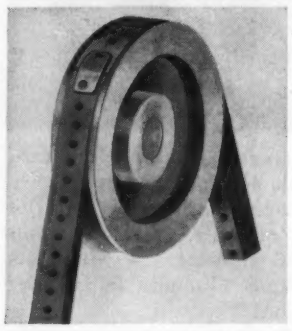
HYDRAULIC MANUFACTURING CO.

138-5 Hurd Avenue Bridgeport 4, Connecticut

▲ For more details circle NED-946 M on enclosed inquiry slip ▲

New Processes & Materials

PERFORATED V-BELTING made into belts with screwdriver



Steel fasteners used to join sections of this perforated V-belting into V-belts are prebent to obviate bending stresses. Only a screwdriver is required to make up the belt. There is no metal-to-metal contact to cause noisy vibration on sheaves. Standard O, A, B, and C-section belting in rolls or packaged assortments is available to fit all standard sheaves. • **Rockwood Pulley Mfg. Co.,** 20 Crosby St., New York 13, N. Y.

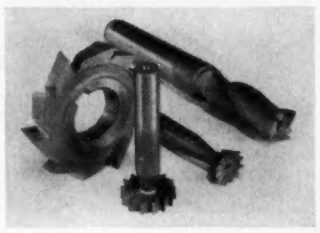
▲ For more details circle NED-947 M on enclosed inquiry slip ▲

ALKALINE PAINT STRIPPER safe for use on metals

Acrylic, alkyd, and other durable paint finishes are effectively removed in simple soaking operations using alkaline-solvent Stripper 150. It can be used safely on steel and magnesium and is inhibited against attack on aluminum, zinc, and brass. It is flashproof and nontoxic. A wax seal on the surface of the compound retards evaporation and increases its life. **Oakite Products, Inc.,** 132G Rector St., New York 6, N. Y.

▲ For more details circle NED-948 M on enclosed inquiry slip ▲

BONDED LUBRICANT used without surface pretreatment



Considerable increases in cutting tool life result from the use of Molykote PVE, a bonded lubricant coating for ferrous surfaces. It is applied with an ordinary paint spray gun, drying within 5 hr at room temperatures to a thin, tough film. Twist drills, reamers, broaches, gear cutters, and bending tools can be treated. The 0.00008 to 0.0001-in. coating has a 0.03 coefficient of friction at 100,000 psi, and an operating temperature range of −300 to 600° F. It is unaffected by lubricating oils, solvents, cutting fluids, forming compounds, and highly compounded gear oils. Applied to ferrous bearing surfaces, it reduces friction and prevents galling and seizing. The two-part material consists of a dispersion of molybdenum disulfide powder in paste form for mixing with reactive components in liquid form. • **Alpha-Molykote Corp.,** 65 Harvard Avenue, Stamford, Conn.

▲ For more details circle NED-949 M on enclosed inquiry slip ▲

NEW! "SCIENCE FAIR" PROJECT KITS

Excellent Xmas Gifts for Your Boy or Girl!

MATERIALS — IDEAS for "SCIENCE FAIR" ENTRIES

(Order by Stock No.—Send Check or M. O.—Money-back Guarantee)

What better way to say "Merry Christmas" to any science minded youngster than to give him one of these new Edmund Kits. They are carefully planned to give any boy or girl the fun and excitement of discovering science facts. Such carefully planned projects can lead the student to awards or scholarships. Adults too will find them an excellent introduction to the various fields of science.

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MATH TREASURE CHESTS—Show your youngster that math can be fun.
Stock No. 70,327-AE (For ages 5 to 8) . . **$10.00 Postpaid**
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Stock No. 70,329-AE (For ages 12 up) . . . **$10.00 Postpaid**

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OVER 1,000 OPTICAL ITEMS . . . Many on-the-job helps . . . quality control aids! 144 pages — hundreds of illustrations. Many war surplus bargains! Imported instruments! Lenses, Prisms, Magnifiers, Telescopes, Satellite Scopes, Microscopes, Binoculars, etc. Optics for industry, research labs, experimenters, hobbyists, math learning aids. Write for FREE Catalog AE

EDMUND SCIENTIFIC CO., Barrington, N. J.

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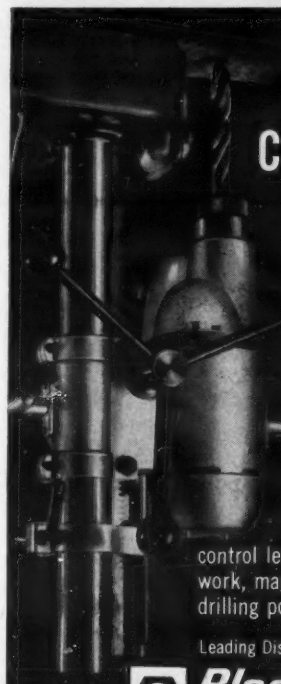

DRILL, TAP, COUNTERSINK, UPSIDE DOWN

B&D's Magnetic Drill Press—¾" model or new two-speed 1¼" unit—operates manually or by exclusive remote control right-side up, sideways or against the ceiling. Unmatched B&D power and control lets you take the tool to the work, magnetically locks it in precise drilling position. Try it!

Leading Distributors Everywhere Sell

Black & Decker

CUTS MAN-HOURS TO MINUTES

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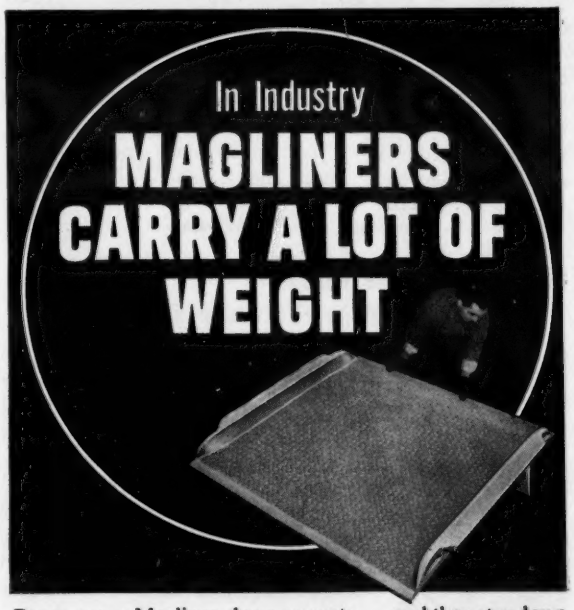
In Industry MAGLINERS CARRY A LOT OF WEIGHT



Down goes a Magliner, down go costs . . . and they *stay* down with the right kind of dock board on the job! Magliner Bulletin DB-204 tells you how to choose the right kind of dock board for *your* dock. Send for your copy today.

MAGLINER MAGNESIUM DOCK BOARDS

Write: Magline Inc., P. O. Box 612, Pinconning, Mich.

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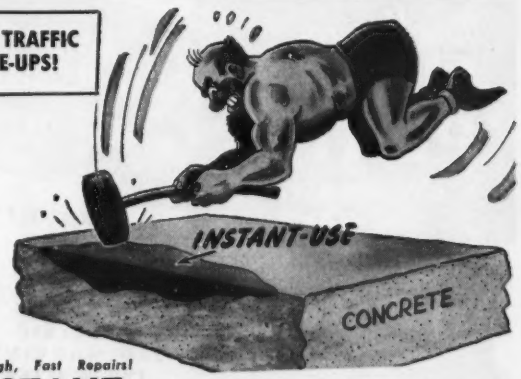
NO TRAFFIC TIE-UPS!



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INSTANT SETTING FLOOR PATCH

Repair broken factory floors without the usual traffic tie-up. Simply shovel INSTANT-USE into hole or rut—tamp smooth—truck over! No waiting! INSTANT-USE bonds tight to old concrete—right up to a feather edge. It's tough. Wears like iron. Won't crack or crumble. Install complete overlay where floors are badly chewed up. Used indoors or out. Immediate shipment.

Get FREE Brochure!

INSTANT-USE

FLEXROCK COMPANY (Offices in principal cities)
3603 Filbert Street, Philadelphia 1, Pa.

Please send me complete INSTANT-USE information and Free INSTANT-USE BROCHURE—no obligation. (Clip and attach Coupon to company letterhead.)

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